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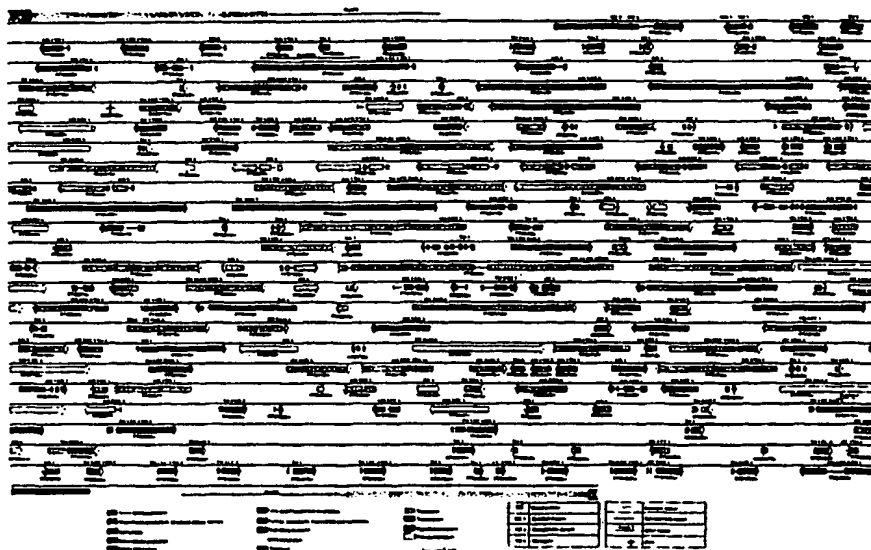
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(54) Title: CHROMOSOME 2 SEQUENCE OF THE HUMAN MALARIA PARASITE *PLASMODIUM FALCIPARUM* AND PROTEINS OF SAID CHROMOSOME USEFUL IN ANTI-MALARIAL VACCINES AND DIAGNOSTIC REAGENTS



Gene map of *P. falciparum* chromosome 2. Predicted coding regions are shown on each strand. Exons of protein-coding genes are indicated by rectangles, and lines linking rectangles represent introns. The single 18S rRNA gene is indicated by a diamond structure. Genes are color-coded according to broad role categories as shown in the key.

Gene identification numbers correspond to PF numbers in Table 2. The letters CC, MC, and TM followed by numbers indicate the number of predicted coiled-coil, membrane, and transmembrane domains in the proteins, respectively.

(57) Abstract

Chromosome 2 of *Plasmodium falciparum* was sequenced and shown to contain 945,000 base pairs and encode 209 predicted genes. Compared to the *Saccharomyces cerevisiae* genome, chromosome 2 has a lower gene density, introns are more frequent, and proteins are markedly enriched in non-globular domains. A new family of surface proteins, rifins, was identified. Rifins are believed to play a role in antigenic variation. The genome sequence provides a foundation for development of methods to control malaria, a disease that kills millions of people annually.

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Chromosome 2 Sequence of the Human Malaria Parasite *Plasmodium falciparum* and Proteins of said
Chromosome Useful in Anti-Malarial Vaccines and Diagnostic Reagents

Field of the Invention

This invention relates to proteins of gene models contained within chromosome 2 (the second largest of 14 identified chromosomes) from the human malaria parasite, *Plasmodium falciparum* (clone 3D7) and related families of gene products from other clones or strains of *Plasmodium falciparum*. These proteins facilitate anti-malarial vaccine development, drug discovery and the development of new diagnostic reagents.

Background of the Invention

Malaria, a disease caused by protozoan parasites of the genus *Plasmodium*, is one of the most important infectious diseases affecting human populations. Approximately 300-500 million people are infected annually, and 1.5-2.7 million lives are lost to malaria each year, with most deaths occurring among children in sub-Saharan Africa (1). Of the 4 species that cause malaria in humans, *P. falciparum* is responsible for the most morbidity and mortality. Parasite resistance to drugs and mosquito resistance to insecticides have led to a resurgence of malaria in many parts of the world, and a pressing need for vaccines and new drugs. Identification of new targets for vaccine and drug development is dependent upon expansion of our understanding of parasite biology, a process hampered by the complexity of the parasite life cycle. Sequencing of the *Plasmodium* genome promises to circumvent many of these difficulties and rapidly increase our knowledge about these parasites.

The *P. falciparum* genome is approximately 30 Mb in size, has a base composition of 82% AT, and contains 14 chromosomes ranging from 0.65 to 3.4 Mb. Chromosomes from different wild isolates exhibit extensive size polymorphism. Mapping studies indicate that the chromosomes contain central domains that are conserved between isolates and polymorphic subtelomeric domains containing repeated sequences. *P. falciparum* also contains two organellar genomes. The mitochondrial genome is a 5.9 kb tandemly-repeated DNA, and a 35 kb circular DNA that encodes genes usually associated with plastid genomes is located within the apicoplast, an organelle of uncertain function in *Plasmodium* and the related parasite *Toxoplasma* (2).

Genomic information is being generated from entire organisms at a rapid pace. Currently there are dozens of microbial organisms for which the entire genetic sequence has been decoded. For the majority of those, simple methods can be used to identify the regions of the DNA that are responsible for the production of proteins. However, in many organisms, for which most have not had complete genome sequencing, the regions of the genome that are identified to make up the final gene structure are not easily defined. In these cases, the resulting gene sequence that encodes a protein is actually made from fragments of the genome sequence. The regions that constitute a protein-encoding gene are known as "exons" and the regions within that are excised from the final gene are known as "introns". It is the identification of the series of exons and their exact relationship to one another that allows one to identify the

amino acid sequence for the encoded protein. Individuals may identify correct gene sequences experimentally and have traditionally done this by looking at complementary DNA (cDNA) derived from RNA isolated from an organism or stage of an organism. However, due to technical reasons, it is rare that full-length sequences of cDNA are obtained by this method. Gene model and the proteins they encode constitute a novel means of identifying proteins from the genome of a microorganism.

SUMMARY OF THE INVENTION

Accordingly, an object of this invention is the use of the identified proteins, through the predicted gene models derived from the genetic sequence of *Plasmodium falciparum* chromosome 2, to identify potential novel targets for anti-Plasmodial and antimalarial drugs vaccines and diagnostics.

Another object of this invention is the identification of novel biochemical pathways that regulate cellular biochemistry, including but not limited to drug resistance. These protein models can then be used to develop diagnostics for the early identification of drug resistant *Plasmodium* species.

Another objective of this invention is the identification through protein homologies of potential drug, vaccine and diagnostic targets from related species of *Plasmodium*.

These and additional objects of the invention are accomplished by identification of protein encoding genes and gene models derived from the sequencing of chromosome 2 from *Plasmodium falciparum*. Specifically, gene models for proteins encoded by DNA sequence from chromosome 2 are identified using computer algorithms that predict gene boundaries both from without and within genes. This invention identifies whole genes and the portions of the DNA that constitute protein-encoding genes.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention will be readily obtained by reference to the following Description of the Preferred Embodiments and the accompanying drawings in which like numerals in different figures represent the same structures or elements. The representation in each of the figures is diagrammatic and no attempt is made to indicate actual scales or precise ratios. Proportional relationships are shown as approximations.

Fig. 1 is a gene map of the *P.falciparum* chromosome 2.

Fig. 2 is DNA sequence of multiple alignment of the predicted 5'-3' exonuclease (PFB0180w) encoded in chromosome 2 with homologous bacterial exonuclease domains showing the large non-globular insert in *Plasmodium*.

Fig. 3 is multiple sequence alignment of rifins encoded on chromosome 2. The predicted coding regions were aligned with CLUSTALW (32) using the default settings.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The identification of all of the predicted proteins from chromosome 2 is accomplished using novel strategies and computational software as described in co-pending Provisional Application Navy Case No. 79,176 filed 24 April 1998. These protein sequences represent targets for undeveloped drugs, vaccines and diagnostics and will lead to the identification of new biochemical pathways and mechanisms of resistance to drugs.

The alternatives to identifying these particular proteins includes a gene-by-gene approach either by amplification of DNA sequences by means such as degenerate polymerase chain reaction, or by hybridization of genomic or expression libraries. Neither of these alternatives is desirable, as none will ensure the full length of the predicted protein. An advantage to the identification of expression libraries is that the biological determined intron-exon boundaries can be determined accurately. However, expression libraries can only be developed from particular

stages of an organism's life cycle and in the case of *Plasmodium* parasites that means, in a practical sense only from blood stage parasites. Therefore by this method it is certain that many protein sequences will be left unidentified.

Chromosome 2 was sequenced using the shotgun sequencing approach used previously to sequence several microbial genomes (3), with modifications to compensate for the AT-richness of *P.falciparum* DNA (4). The most important modifications were extraction of DNA from agarose under high-salt conditions to prevent melting of the DNA at high temperature, avoidance of UV light, use of the "v+i" protocol for library construction, sequencing with dye-terminator chemistry, use of a reduced extension temperature in PCR reactions, and use of a transposon-insertion method for closure of very AT-rich gaps. The assembly software was also modified to minimize miss-assembly of AT-rich sequences. The sequence included portions of both telomeres, had an average redundancy of 10.7-fold, and co-linearity of the final sequence and genomic DNA was proven by use of optical restriction and YAC maps.

Chromosome 2 of *P.falciparum* (clone 3D7) is 945 kb in length and has an overall base composition of 80.2% A+T. The chromosome contains a large central region encoding single-copy and several duplicated genes, subtelomeric regions containing variant antigen genes (var) (5), RIF-1 elements (repetitive interspersed family) (6) and other repeats, and typical eukaryotic telomeres (Fig. 1). Figure 1. Gene map of *P.falciparum* chromosome 2. Predicted coding regions are shown on each strand. Exons of protein encoding genes are indicated by rectangles with lines linking rectangles representing introns. The single tRNA^{Glu} gene is indicated by a cloverleaf structure. Genes are color-coded according to broad role categories as shown in the key. Gene identification numbers correspond to those in Table 2. The letters CC, NG and TM followed by numerals indicate the number of predicted coiled-coil, non-globular, and transmembrane domains in the proteins, respectively. The terminal 19 kb portions of the chromosome are non-coding and exhibit 77% identity in opposite orientations. The left and right telomeres consist of tandem repeats of the sequence TT(TC)AGGG (7) totaling 1141 and 551 nt, respectively. The subtelomeric regions do not exhibit repeat oligomers until approximately 12-20 kb into the chromosome, where rep20 (8), a 21 bp tandem direct repeat found exclusively in these regions, occurs 134 and 96 times in the left and right ends of the chromosome, respectively. The sequence similarity observed between the subtelomeric regions supports previous suggestions that recombination between chromosome ends may be one mechanism by which genetic diversity is generated. A region with centromere functions could not be identified based on sequence similarity to *S. cerevisiae* or other eukaryotic centromeres (9). However, several regions of up to 12 kb are devoid of large open reading frames and might contain the centromere. Alternatively, centromeric functions may be defined by higher-order DNA structures and chromatin-associated protein complexes (10).

Two hundred nine protein-encoding genes and a gene for tRNA^{Glu} (Fig. 1, Table 1) were predicted (11) on chromosome 2, giving a gene density of one gene per 4.5 kb, a value between that observed in yeast (one gene per 2 kb) and *C. elegans* (one gene per 7 kb). Of the 209 protein-encoding genes, 43% contain at least one intron. This is an estimate because some introns may have been missed by the gene finding method. Most spliced genes consist of two or three exons. In terms of intron content and gene density, the *Plasmodium* genome, assessed by the analysis of the first completed chromosome sequence, appears to be intermediate between the condensed yeast genome and the intron-rich genomes of multicellular eukaryotes.

Table 1.

Summary of features of *P. falciparum* chromosome 2 and comparison to *S. cerevisiae* chromosome 3.

ND, not determined.

†Protein structural features were predicted as described (11).

Description	Number	
	P. f. chr 2	S. c. chr 3
Chromosome length (kb)	945	315
G + C content (%)	19.7	38.6
Exons	24.3	40.0
Introns	13.3	ND*
Kilobases per gene	4.50	1.73
Number of predicted protein coding regions	209	171
Number of genes with introns (%)	90 (43)	4 (2.2)
tRNA genes	1	10
Class of proteins†		
Total	209	171
Secreted (%)	22 (11)	11 (6)
Integral membrane (%)	90 (43)	42 (24)
Integral membrane with multiple predicted transmembrane domains (%)	27 (13)	21 (12)
Containing coiled-coil domains (%)	111 (53)	32 (19)
Containing other large compositionally biased regions with predicted non-globular structure (%)	155 (75)	71 (41)
Completely non-globular (%)	17 (8)	6 (3.5)
With detectable homologs in other species	87 (42)	145 (85)

The proteins encoded in chromosome 2 (Table 2) fall into 3 categories: i) 72 proteins (34%) are conserved in other genera and contain one or more distinct globular domains; ii) 47 proteins (23%) belong to *Plasmodium*-specific families with identifiable structural features and in some cases, known functions; iii) 90 predicted proteins (43%) have no detectable homologs, although many contain structural features such as signal peptides and transmembrane domains. Homologs outside *Plasmodium* were detected for 87 (42%) of the 209 predicted proteins. This includes proteins in the 1st category, plus those proteins in the 2nd category that possess conserved domain(s) arranged in a manner unique to *Plasmodium*. The percentage of evolutionarily conserved proteins is about two-fold lower than found for other genomes, mainly because most of the remaining proteins were predicted to consist primarily of non-globular domains (12) (Table 1). The abundance of non-globular domains in *Plasmodium* proteins is very unusual; the proportion of proteins with predicted large non-globular domains in other eukaryotes, such as *S. cerevisiae* (Table 1) or *C. elegans* (13) is approximately half that observed in *Plasmodium*. Furthermore, 13 of the 87 conserved proteins on chromosome

2 appear to contain large non-globular structures (>30 amino acids) inserted directly into globular domains, as determined by alignment with homologs from other species.

Table 2.

Identification of genes on *P.falciparum* chromosome 2.

PF#, systematic name assigned according to a method adapted from *S. cerevisiae* (11).

Description: Name, if known, and prominent features of the gene.

Abbreviations are as follows: euk, eukaryotic; nt, nucleotide; OO, organellar origin; TP, transit peptide.

PF#	Description	PF#	Description
<u>Amino acid biosynthesis</u>			
PFB0200c	aspartate aminotransferase		
<u>Biosynthesis of cofactors, prosthetic groups, and carriers</u>			
PFB0130w	prenyl transferase		
PFB0220w	ubiquinone biosynthesis methyltrans.		
<u>Fatty acid and phospholipid metabolism</u>			
PFB0385w	acyl-carrier protein		
PFB0410c	phospholipase A2-like a/b fold hydrolase		
PFB0505c	3-ketoacyl carr. protein synthase III, FabH (OO, TP)		
PFB0685c	ATP-dept. acyl-CoA synthetase (TP)		
PFB0695c	ATP-dept. acyl-CoA synthetase (TP)		
<u>Purines, pyrimidines, nucleosides, and nucleotides</u>			
PFB0295w	adenylosuccinate lyase (OO)		
<u>DNA metabolism</u>			
PFB0160w	ERCC1-like excision repair protein		
PFB0180w	protein with 5'-3' exonucl. domain (OO, TP)		
PFB0205c	protein with 5'-3' exonucl. domain (Kem-1 family)		
PFB0265c	RAD2 endonucl.		
PFB0440c	chromatinic RING finger protein, DRING ortholog		
PFB0720c	ori. recognition cmplx subunit 5 (ATPase)		
PFB0730w	BRAHMA ortholog (DNA helicase superfamily II)		
PFB0840w	replication factor C, 40 kDa subunit (replication activat.)		
PFB0875c	chromatin-binding protein (SKI/SNW family)		
PFB0895c	replication factor C, 140 kDa subunit (ATPase)		
<u>Energy metabolism</u>			
PFB0795w	ATP synthase alpha chain		
PFB0880w	FAD-dependent oxidoreductase (OO)		
<u>Transcription</u>			
PFB0140w	metal binding protein (DHHC domain)		
PFB0175c	protein of the MAK16 family		
PFB0215c	protein with Egl-like 3'-5' exonucl. domain		
PFB0245c	RNA polymerase 16kD subunit, RPB4-like		
PFB0255w	RRM type RNA binding protein		
PFB0290c	Zn-ribbon transcription factor (TFIIS family)		
PFB0370c	RNA-binding protein (KH domain)		
PFB0445c	eIF-4A-like DEAD family RNA helicase		
PFB0620w	YOU2-like small euk. C2C2 zinc finger protein		
PFB0715w	DNA-directed RNA polymerase subunit 2		
PFB0725c	metal binding protein (DHHC domain)		
PFB0855c	rRNA methylase (SpoU family) (OO, TP)		
PFB0860c	RNA helicase		
PFB0865w	small nuclear ribonucleoprotein. (SNRNP family)		
PFB0890c	pseudouridine synthet. (RsuA fam.); 1st euk. member (OO)		
<u>Translation and post-translational modification</u>			
PFB0165w	tRNA-Glu		
PFB0240w	PINT domain protein (proteasomal subunit)		

	PFB0260w	PSD2-like 26S proteasomal subunit
	PFB0325c	SERA antigen/ protease with active Cys
	PFB0330c	SERA antigen/ protease with active Cys
	PFB0335c	SERA antigen/ protease with active Cys
5	PFB0340c	SERA antigen/ protease with active Ser
	PFB0345c	SERA antigen/ protease with active Ser
	PFB0350c	SERA antigen/ protease with active Ser
	PFB0355c	SERA antigen/ protease with active Ser
10	PFB0360c	SERA antigen/ protease with active Ser
	PFB0380c	phosphatase (acid phosphatase family)
	PFB0390w	ribosome releasing factor (OO, TP)
	PFB0455w	ribosomal protein L37A
	PFB0515w	glycosyl transferase (novel euk. family)
	PFB0525w	asparaginyl-tRNA synthetase (OO, TP)
15	PFB0545c	ribosomal protein L7/L12 (OO)
	PFB0550w	euk. peptide chain release factor
	PFB0585w	Leu/Phe-tRNA protein transferase, 1st euk. member (OO)
	PFB0645c	ribosomal protein L13 (OO)
	PFB0830w	ribosomal protein S26
20	PFB0885w	ribosomal protein S30 Regulatory functions
	PFB0150c	Ser/Thr protein kinase
	PFB0510w	GAF domain protein (cyclic nt signal transduct.)
	PFB0520w	novel protein kinase
	PFB0605w	Ser/Thr protein kinase
25	PFB0665w	Ser/Thr protein kinase
	PFB0815w	calcium-dept. protein kinase (C-term. EF hand)

Transport

	PFB0210c	monosaccharide transporter
	PFB0275w	membrane transporter
30	PFB0435c	predicted amine transporter
	PFB0465c	membrane transporter

Cell surface

	PFB0010w	var gene
	PFB0015c	rifin
35	PFB0020c	var gene fragment
	PFB0025c	rifin
	PFB0030c	rifin
	PFB0035c	rifin
	PFB0040c	rifin
40	PFB0045c	var gene fragment
	PFB0050c	rifin pseudogene
	PFB0055c	rifin
	PFB0060w	rifin
	PFB0065w	rifin
45	PFB0100c	knob-associated His-rich protein
	PFB0300c	merozoite surface antigen MSP-2
	PFB0305c	merozoite surface antigen MSP-5 (EGF domain)
	PFB0310c	merozoite surface antigen MSP-4 (EGF domain)
	PFB0400w	PfS230 paralog (predicted secreted protein)
50	PFB0405w	transmission blocking target antigen PfS230
	PFB0570w	predicted secreted protein (thrombospondin domain)
	PFB0760w	Mtn3/RAG1IP-like protein
	PFB0915w	RESA-H3 antigen
	PFB0955w	rifin
55	PFB0975c	var gene fragment
	PFB1000w	rifin pseudogene

	PFB1005w	rifin
	PFB1010w	rifin
	PFB1015w	rifin
	PFB1020w	rifin
5	PFB1025w	var gene fragment
	PFB1030w	var gene fragment
	PFB1035w	rifin
	PFB1040w	rifin
	PFB1045w	var gene fragment
10	PFB1050w	rifin
	PFB1055c	var gene
	<u>Other cellular processes</u>	
	PFB0085c	protein with DnaJ domain (RESA-like)
	PFB0090c	protein with DnaJ domain
15	PFB0450w	protein translocation complex, sec61 gamma chain
	PFB0480w	syntxin
	PFB0500c	RAB GTPase
	PFB0595w	protein with DnaJ domain, DNJ1/SIS1 family
	PFB0635w	T-complex protein 1 (HSP60 fold superfamily)
20	PFB0640c	WEB-1 ortholog, WD40
	PFB0750w	VPS45-like protein (STXBP/UNC-18/SEC1 family)
	PFB0805c	clathrin coat assembly protein
	PFB0920w	protein with DnaJ domain (RESA-like)
	PFB0925w	protein with DnaJ domain (RESA-like)
25	<u>Unknown function</u>	
	PFB0270w	member family of bacterial proteins (OO)
	PFB0320c	member hesB fam. (poss. redox activity, OO,TP)
	PFB0420w	YgbB protein, 1st euk. member (OO, TP)
	PFB0425c	protein of the YMR7 family
30	PFB0110w	predicted integral membrane protein
	PFB0115w	predicted secreted protein
	PFB0120w	predicted integral membrane protein
	PFB0125c	predicted membrane associated protein
	PFB0135c	hypothetical protein
35	PFB0145c	hypothetical protein
	PFB0155c	hypothetical protein
	PFB0170w	hypothetical protein
	PFB0185w	hypothetical protein
	PFB0190c	predicted membrane associated protein
40	PFB0195c	hypothetical protein
	PFB0225c	hypothetical protein
	PFB0230c	hypothetical protein
	PFB0235w	hypothetical protein
	PFB0250w	hypothetical protein
45	PFB0280w	hypothetical protein
	PFB0285c	hypothetical protein
	PFB0315w	hypothetical protein
	PFB0365w	hypothetical protein
	PFB0375w	hypothetical protein
50	PFB0395w	predicted membrane associated protein
	PFB0400w	PfS230 paralog (predicted secreted protein)
	PFB0415c	predicted integral membrane protein
	PFB0430c	hypothetical protein
	PFB0460c	hypothetical protein
55	PFB0470w	hypothetical protein
	PFB0475c	predicted multiple-TM membrane protein

	PFB0485c	predicted multiple-TM membrane protein
	PFB0490c	hypothetical protein
	PFB0495w	hypothetical protein
	PFB0530c	hypothetical protein
5	PFB0535w	predicted multiple-TM membrane protein
	PFB0540w	hypothetical protein
	PFB0555c	hypothetical protein
	PFB0560w	hypothetical protein
	PFB0565w	predicted secreted protein
10	PFB0575c	hypothetical protein
	PFB0580w	hypothetical protein
	PFB0590w	hypothetical protein
	PFB0600c	hypothetical protein
	PFB0610c	hypothetical protein
15	PFB0615c	predicted membrane associated protein
	PFB0625w	hypothetical protein
	PFB0630c	hypothetical protein
	PFB0650w	hypothetical protein
	PFB0655c	hypothetical protein
20	PFB0660w	hypothetical protein
	PFB0670c	predicted coiled-coil domain protein
	PFB0675w	predicted secreted protein
	PFB0680w	hypothetical protein
	PFB0690w	hypothetical protein
25	PFB0700c	hypothetical protein
	PFB0705w	hypothetical protein
	PFB0710c	predicted integral membrane protein
	PFB0735c	predicted integral membrane protein
	PFB0740c	hypothetical protein
30	PFB0745w	hypothetical protein
	PFB0755w	hypothetical protein
	PFB0765w	hypothetical protein
	PFB0770c	predicted multiple-TM membrane protein
	PFB0775w	hypothetical protein
35	PFB0780c	predicted integral membrane protein
	PFB0785c	predicted integral membrane protein
	PFB0790c	predicted integral membrane protein
	PFB0800c	hypothetical protein
	PFB0810w	predicted membrane associated protein
40	PFB0820c	hypothetical protein
	PFB0825c	hypothetical protein
	PFB0835c	hypothetical protein
	PFB0845w	predicted integral membrane protein
	PFB0850c	hypothetical protein
45	PFB0870w	hypothetical protein
	PFB0900c	hypothetical protein
	PFB0905c	hypothetical protein
	PFB0910w	predicted integral membrane protein
	PFB0930w	predicted integral membrane protein
50	PFB0935w	predicted secreted protein
	PFB0940w	hypothetical protein
	PFB0945w	hypothetical protein
	PFB0950w	predicted integral membrane protein
	PFB0960c	hypothetical protein
55	PFB0965c	hypothetical protein
	PFB0970c	hypothetical protein

PFB0980w predicted integral membrane protein
 PFB0985c predicted integral membrane protein
 PFB0990c predicted secreted protein
 PFB0995w predicted integral membrane protein

To determine whether non-globular domains and proteins are expressed in *P. falciparum*, RT-PCR was performed on 11 non-globular domains and two genes encoding predominantly non-globular proteins using total blood stage RNA as template. In all cases, RT-PCR products were the same size as those amplified from genomic DNA, and the sequence of RT-PCR products matched genomic DNA sequence (14). Thus, it is likely that most, if not all, predicted non-globular domains in chromosome 2 genes are expressed. One example of insertion of a non-globular domain into a well-defined globular domain is seen in a protein containing a 5'-3' exonuclease (Fig. 2). Figure 2. Multiple alignment of the predicted 5'-3' exonuclease (PFB0180w) encoded in chromosome 2 with homologous bacterial exonuclease domains showing the large non-globular insert in *Plasmodium*. The alignment was constructed using the profile alignment option of CLUSTALW (32). The alignment column shading is based on a 100% consensus, which is shown underneath the alignment; h indicates hydrophobic residues (A,C,F,I,L,M,V,W,Y; yellow background), u indicates "tiny" residues (G, A, S; green background), o indicates hydroxy residues (S, T), c indicates charged residues (D,E,K,R,H), and "+" indicates positively charged residues (K,R; purple coloring). The aspartates involved in metal coordination are shown by red background and inverse type. Secondary structure elements derived from the crystal structure of *Thermus aquaticus* DNA polymerase (15) are shown above the alignment (H indicates α -helix, and E indicates extended conformation, or β -strand). 5'-3-exo_Aae is a stand alone exonuclease from *Aquifex aeolicus*, and the remaining bacterial sequences are the N-terminal domains of DNA polymerase I. Alignment of the *Plasmodium* sequence with 4 bacterial exonucleases revealed a 176-amino acid insertion in a region between a strand and helix in the 3-dimensional structure of this protein (15). This suggests that eukaryotic proteins can accommodate inserts that may be excluded from the protein core folding without impairing protein function. The propagation of non-globular domains in *Plasmodium* suggests that such proteins provide specific selective advantages to the parasite. Structural analysis of *Plasmodium* proteins containing non-globular inserts may be valuable for understanding general principles of protein folding.

Of the 87 conserved proteins encoded on chromosome 2, 72 (83%) show greatest similarity to eukaryotic homologs (Table 2). By contrast, the remaining 15 proteins are most similar to bacterial proteins, and 4 of these represent the first eukaryotic members of protein families so far seen only in bacteria. At least some of these 15 genes

may have been transferred to the nuclear genome from an organellar genome after divergence of the phylum Apicomplexa from other eukaryotic lineages. Several of these proteins appear to contain N-terminal organellar import peptides (16) and may function within the apicoplast or the mitochondrion. One such gene encodes 3-ketoacyl-ACP synthase III (FabH), which catalyzes the condensation of acetyl-CoA and malonyl-ACP in Type II (dissociated) fatty acid synthase systems. Type II synthase systems are restricted to bacteria and the plastids of plants, confirming previous hypotheses that the *Plasmodium* apicoplast contains metabolic pathways distinct from those of the host (17, 18).

Because Apicomplexa represent a deep branch in the eukaryotic tree, the presence of eukaryotic-specific genes in *P. falciparum* suggests the appearance of these genes early in eukaryotic evolution. The majority of these genes code for proteins involved in DNA replication, repair, transcription, or translation (Table 2) and include the origin recognition complex subunit 5, excision repair proteins ERCC1 and RAD2, and proteins involved in chromatin dynamics, such as the BRAHMA helicase, an ortholog of the DRING protein containing the RING finger domain, and chromatin protein SNW1. Furthermore, several eukaryotic proteins involved in secretion are encoded in chromosome 2, such as SEC61 g subunit, the coated pit coatamer subunit, and syntaxin, suggesting early emergence of the eukaryotic secretory system.

Proteins of the DnaJ superfamily act as cofactors for HSP70-type molecular chaperones and participate in protein folding and trafficking, complex assembly, organelle biogenesis, and initiation of translation (19). Five proteins containing DnaJ domains are present on chromosome 2, which suggests multiple roles for this domain in the *Plasmodium* life cycle. Two of these consist primarily of the DnaJ domain, whereas three also contain a large non-globular domain. Several proteins containing a DnaJ domain have been detected on other chromosomes, indicating that this is a large gene family in *Plasmodium* (20). One of its members, the ring-infected erythrocyte surface antigen (RESA), binds to the cytoplasmic side of the erythrocyte membrane, suggesting that DnaJ domains perform chaperone-like functions in the formation of protein complexes at this location (21). DnaJ domains in some *P. falciparum* proteins contain substitutions in the His-Pro-Asp signature required for interaction with HSP-70-type proteins, which may indicate a modification of the typical chaperone function.

Chromosome 2 contains 5 protein families that are unique to *Plasmodium* in terms of their distinct domain organization, although 3 of them contain domains conserved in other genera. The genes encoding the *Plasmodium*-specific families are primarily located near the ends of the chromosome. A single var gene was identified in each subtelomeric region. The var genes encode large transmembrane proteins (PIEMP1) expressed in knobs on the surface

of schizont-infected red cells. PfEMP-1 proteins exhibit extensive sequence diversity, are clonally-variant, and are involved in antigenic variation, cytoadherence, and rosetting (5). In addition to the full-length var genes, 6 small ORFs were identified in the subtelomeric regions that had similarity to var sequences. Five of these resembled var exon II cDNAs or Pf60.1 sequences reported previously (22, 23).

5 The largest *Plasmodium*-specific family found on chromosome 2 encodes proteins that were dubbed rifins, after the RIF-1 repetitive element. First described by Weber (6), RIF-1 contained a 1 kb ORF but no initiation codon, was found on most chromosomes, and was transcribed in late blood stage parasites. The function of the RIF-1 element was unknown. Eighteen ORFs with similarity to RIF-1 were found in the subtelomeric regions of chromosome 2, centromeric to the var genes. Inspection of the sequence upstream of these ORFs revealed exons encoding signal peptides, indicating that the RIF-1 elements are actually genes consisting of 2 exons. These genes encode potential transmembrane proteins with predicted molecular weights of 27-35 kD with an extracellular domain containing conserved Cys residues which might participate in disulfide bonding, one or more transmembrane segments, and a short basic C-terminus that is intracellular. The extracellular domain also contains a highly variable region (Fig. 3). RT-PCR with schizont RNA showed that 1 of 6 rifin genes tested was transcribed. Figure 3. Multiple sequence alignment of rifins encoded on chromosome 2. The predicted coding regions were aligned with CLUSTALW (32) using the default settings. The alignment column shading is based on a 95% consensus, which is shown underneath the alignment; h indicates hydrophobic residues (A,C,F,I,L,M,V,W,Y; yellow background), p indicates polar residues (D,E,H,K,N,Q,R,S,T; red coloring), b indicates big residues (F,I,L,M,V,W,Y, K,R,Q,E; gray background), and "+" indicates positively charged residues (K,R; red coloring). The cysteines conserved in subsets of rifins are shown by blue shading and inverse coloring. The function of the rifins is unknown, but their sequence diversity, predicted cell surface localization, and expression in erythrocytic stages suggests that like var genes they may be clonally-variant. In addition, it is reasonable to expect that because they are predicted to be expressed on the red cell surface, the rifins interact with host ligands and are involved in cytoadherence, rosetting, or other pathogenic processes involving host-parasite interactions. This view is supported by others who suggest that the close proximity of the Rifin family of gene to the highly variable var genes means that the rifins encode for variable molecules that are present on the surface of the infected red cell (6a). Thus the rifins can reasonably be expected to be useful as targets of vaccine-induced immunity. Interference of the parasite-host interaction(s) mediated by rifins by the use of drugs that inhibit or prevent such interaction(s) can also be expected to have therapeutic benefits. Multiple rifin genes were detected in the

telomeric regions of chromosomes 3 and 14, suggesting that rifin genes have propagated as clusters in the course of *Plasmodium* evolution (24). If the number found on chromosome 2 is representative of other chromosomes, there may be 500 or more rifin genes in the *P. falciparum* genome (~7 % of all protein-coding genes), making it the most abundant gene family in this organism. The presence of var and rifin genes and other ORFs in subtelomeric regions of *P. falciparum* chromosomes confirms that the subtelomeric regions are not transcriptionally silent (25). Since our work was published (25a), others have confirmed that the rifins are transcribed, translated, and expressed on the surface of the parasite-infected red cell, and are clonally-variant (25b), and that rifin genes are located on other *P. falciparum* chromosomes (26c).

Another family of membrane-associated proteins, called SERAs (SErine Repeat Antigens), contain a papain protease-like domain. A cluster of 3 SERA genes, all transcribed in the same direction (from centromere to telomere), was known to be on chromosome 2 (26); at least one has been evaluated for use in blood stage vaccines. These genes are part of an 8-gene cluster; 7 genes have a similar 4 exon structure, but the gene at the 3' end of the cluster contains only 3 exons. The protease domains in these proteins are unusual in that 5 of the 8 contain serine instead of cysteine in the active nucleophile position, suggesting that they are serine proteases with a structure typical of cysteine proteases (27).

Two proteins were identified, MSP-4 and MSP-5, which contain an epidermal growth factor (EGF) module in their extracellular domains (28, 29). Together with MSP-1, a multi-EGF domain protein encoded on chromosome 3, and two *Plasmodium* sexual stage antigens (30), these are the only proteins outside the animal kingdom that contain EGF repeats, suggesting that the sequence for this domain was obtained by *Plasmodium* from its animal host. The plasmodial EGF domains may be involved in parasite adhesion to host cells.

In addition to the families of *Plasmodium*-specific proteins, chromosome 2 contains genes for many secreted and membrane proteins. One of these genes (PFB0570w) encodes a protein with a modified thrombospondin domain, and was transcribed in blood stage parasites. Other *Plasmodium* proteins containing thrombospondin domains, such as sporozoite surface protein 2/TRAP and circumsporozoite protein, are involved in parasite invasion of host cells (31), and it is reasonable to expect that the protein encoded by gene PFB0570w is involved in the binding of infected red cells or extracellular parasites to host cell ligands. Thus the protein encoded by PFB0570w can reasonably be expected to be useful as a target of vaccine-induced immunity. Interference of the parasite-host interaction(s) mediated by PFB0570w by the use of drugs that inhibit or prevent such interaction(s) can also be expected to have therapeutic

benefits. The other predicted transmembrane and secreted proteins encoded on chromosome 2, singly or in combinations, can also be expected to be useful as targets for vaccines. For example, other published work has shown that *Plasmodium* genes encoding parasite transmembrane or surface proteins can be inserted into mammalian expression vectors in order to construct DNA vaccines, that when used to immunize experimental animals, induce humoral and cellular immune responses to the *Plasmodium* protein(s), including protective cytotoxic T cell responses; (31a-h). A DNA vaccine encoding *P.falciparum* circumsporozoite protein has also been shown to induce cytotoxic T cell responses in human volunteers (31i). The predicted transmembrane and secreted proteins encoded on chromosome 2 can also be expected to induce protective cellular or humoral immune responses when formulated as DNA vaccines or as other types of vaccines such as recombinant proteins. Portions or fragments of the proteins that contain B or T cell epitopes encoded on chromosome 2 may also be used in the construction of vaccines (31e, 31j).

Determination of the first *P.falciparum* chromosome sequence demonstrates that the AT-richness of *P.falciparum* DNA will not prevent sequencing of the genome. Although technical difficulties not observed during the sequencing of other microbial genomes were encountered, solutions to these problems were found that will facilitate sequencing of the remaining chromosomes. The genome sequence will be of great value in the study of *Plasmodium* biology, and the development of new drugs and vaccines for the treatment and prevention of malaria. In addition to these practical benefits, the *Plasmodium* genome sequence will provide broader biological insights, particularly with regard to the plasticity of the eukaryotic genome manifest in the preponderance of the predicted non-globular domains in plasmodial proteins.

Having described the invention, the following examples are given to illustrate specific applications of the invention including the best mode now known to perform the invention. These specific examples are not intended to limit the scope of the invention described in this application.

Example 1. The genes that encode the family of Rifins will be amplified using the polymerase chain reaction and cloned into DNA vaccines - a plasmid vector designed to express the cloned fragment when injected into human or animal tissue. These Rifin vaccines will express the individual Rifin polypeptide using cellular protein expression systems. Each DNA vaccine will be designed to express an individual Rifin polypeptide. These polypeptides will then be taken up by antigen presenting cells and the host immune system will respond by producing either cellular or humoral immune responses directed at each of the expressed polypeptides. This immune response will prevent or reduce *Plasmodium falciparum* parasite development in host cells by preventing the invasion of parasites into

erythrocytes, or by opsonization which will result in the clearance of parasites by antibody mediated cellular immunity. These antibodies may act by blocking merozoite invasion of erythrocytes by blocking the initial interaction with the erythrocyte cell surface agglutinate merozoites before invasion or at, or immediately preceding, rupture of the mature schizont.; by killing the infected erythrocyte, via either complement-mediated lysis or phagocytosis; by preventing mature schizonts from adhering to endothelial cells (cytoadherence) by blocking receptor/ligand interactions, thereby preventing sequestration and enhancing splenic clearance; by preventing the release of, or inactivate, harmful toxins released from the infected erythrocyte; by antibody dependent or antibody independent cellular mechanisms directed against the merozoite in circulation or the intracellular parasite, including antibody dependent cellular inhibition (ADCI) or by antibody-dependent cellular cytotoxicity (ADCC); or by cytokines or other factors released by activated CD4+ T cells or non-T cells, or secreted by reticuloendothelial cells that directly kill the infected erythrocyte or kill/inactivate the intraerythrocytic parasite

Example 2. The genes involved in critical biochemical pathways, such as fatty acid biosynthesis can be identified as targets for antimalarial drug development. The identified polypeptides will be expressed as recombinant proteins and used in in vitro drug screening assays to identify chemical compounds that interfere with the normal functioning of the recombinant polypeptide. These drugs will then be taken through traditional drug development and to clinical trials for efficacy.

Example 3 The genes identified in chromosome 2 can be used to produce diagnostic reagents for laboratory or field detection of *P.falciparum* parasites. Using high throughput methods, such as DNA microarray technology or mass spectrometry , or other techniques, the genes and/or proteins that are identified to be expressed in abundance can be used to develop diagnostic reagents. For example, DNA probes can be designed which will hybridize to parasite nucleic acid extracts and then be useful to determine the presence of parasites in a clinical sample. Identified proteins that are shown to be highly expressed in blood stage parasites will be used to produce recombinant proteins used to produce antisera in experimental animals. These sera will then be used in diagnostic assays to detect parasites in clinical samples.

Example 4. The genes identified in chromosome 2 will be used in high throughput assays to identify those that are involved in the development of anti malarial drug resistance. These genes can then be exploited as in Example 3, in the development of drug resistant diagnostic tests. For example, antisera against the identified drug resistance proteins can be used in an ELISA assay to detect the expression of proteins in parasite extracts or clinical samples that

are involved in parasite-mediated drug resistance.

Example 5. Chromosome Sequencing and Assembly Method.

Chromosomes were resolved on preparative pulsed field gels (1.2% SeaPlaque GTG agarose, BioRad DRII apparatus, 180-250 sec switch time, 120 field angle, 3.7 V/cm for 90 hours at 14°C). Chromosome 2 bands from 5 gels were adjusted to 0.3 M sodium acetate to prevent melting of the AT-rich DNA and digested with agarase. Exposure to UV light was minimized. A shotgun library of 1-2 kb fragments was prepared in pUC18 as described [R. D. Fleischmann, et al., Science 269, 496-512 (1995)], except that treatment with E. coli DNA polymerase I was performed (0.5 mM dNTPs, 37°C for 10 minutes) after the second ligation step to close nicks prior to electroporation into DH10B cells. Because the gel-purified chromosome 2 DNA was only ~85% pure due to co-migration of sheared DNA from other chromosomes, and to provide excess coverage to compensate for possible non-randomness of the shotgun library, 23,768 sequences (~10X coverage) were obtained. FS+ dye-terminator chemistry (Perkin Elmer Applied Biosystems, catalog no. 4303141) was superior to dye-primer chemistry for sequencing of AT-rich DNA. Sequences were assembled using TIGR Assembler [G. S. Sutton, O. White, M. D. Adams, A. R. Kerlavage, Genome Sci. Technol. 1, 9-19 (1995)] modified to assemble AT-rich sequences. Neighboring contigs were identified using the program GROUPER (A. D. Mays, TIGR), and 10 groups of 114 contigs were mapped on the chromosome by comparison to STS markers [M. Lanzer, D. de Bruin, J. V. Ravetch, Nature 361, 654-657 (1993)]. Closure of physical and sequence gaps was performed as described [R. D. Fleischmann, et al., Science 269, 496-512 (1995)]. To close physical gaps, PCR reactions with genomic DNA template were done with primers from adjacent mapped groups, or from one mapped group and each of the unmapped groups. PCR reactions (Expand Long Template PCR System, Boehringer Mannheim 1681 842) contained 100 ng of genomic DNA and 15 pmol of each primer (BioServe Technologies) in a 50 µl reaction. Cycling conditions (Perkin Elmer GeneAmp PCR Systems 9600 or 9700) were 94°C for 2 min, followed by 10 cycles of 94°C for 1 min, 50 or 55°C for 1 min, and 60°C for 2 min, 20 cycles of 94°C for 1 min, 50 or 55°C for 1 min, and 60°C for 2 min plus 20 sec per cycle, and 1 cycle at 60°C for 10 min. PCR products were purified (QIAquick PCR Purification Kit; Qiagen 28104) and sequenced using dye-terminator chemistry. Sequence gaps that were too AT-rich for primer synthesis and walking were closed by insertion of the artificial transposon AT-2 [S. E. Devine, J. D. Boeke, Nucleic Acids Res. 22, 3765-3772 (1994)] into plasmid templates spanning each sequence gap; multiple transposon-containing subclones of each template were sequenced to close the gaps. The coverage criteria were that every position required at least double-clone coverage (or sequence from a PCR product amplified from

genomic DNA), and either sequence from both strands or with two different sequencing chemistries. The sequence was edited manually using TIGR Editor, and additional sequencing reactions were performed to improve coverage and resolve sequence ambiguities. To independently confirm colinearity of the assembled sequence and genomic DNA, NheI and BamHI optical restriction maps of chromosome 2 DNA were prepared [J. Jing et al., submitted for publication] and compared with restriction maps predicted from the sequence. The relative error of predicted and observed fragment sizes was 4.3% and 5.8% for the NheI and BamHI maps, respectively, indicating that the assembled sequence was an accurate representation of the chromosome. Further proof of colinearity was obtained by comparison of the sequence to a scaffold of YAC-end sequences from chromosome 2 YACs isolated from a library provided by K. Hinterberg [J. Foster, J. Thompson, *Parasitol. Today* 11, 1-4 (1995); L. Cummings et al.; in preparation].

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(1997)], and transmembrane helices were predicted using PHThm [B. Rost, R. Casadio, P. Fariselli, C. Sander, Protein Sci 4,521-533 (1995)]. Coiled coil domains were predicted using COILS (John Kuzio, NCBI). Non-globular structures were predicted using SEG [J. C. Wootton, S. Federhen, Methods Enzymol 266, 554-571 (1996)]. Multiple sequence alignments were constructed using CLUSTALW or the Gibbs-sampling option of the MACAW program [G.D. Schuler, S. F. Altschul, D. J. Lipman, Proteins 9, 180-190 (1991); A. F. Neuwald, J. S. Liu, C. E. Lawrence, Protein Sci 4,1618-1632 (1995)]. Transfer RNAs were identified with tRNAscan [T. M. Lowe, S. R. Eddy, Nucleic Acids Res 25, 955-64 (1997)]. Systematic gene names based on a scheme used for *S. cerevisiae* [H. W. Mewes, et al., Nature 387, 7-65 (1997)] were assigned using the convention PF (for *P. falciparum*), a letter for the chromosome (A for chromosome 1, B for chromosome 2, etc.), a 3-digit code ordering the genes from left-to-right in increments of 5 (to allow for addition of new genes), and a letter denoting the coding strand (w or c).

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Obviously, many modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. The nucleotide sequences encoding the proteins of chromosome 2 of *Plasmodium falciparum* and fragments thereof.
2. The proteins encoded by chromosome 2 of *Plasmodium falciparum* and fragments thereof.
- 5 3. The proteins of Claim 2 known as rifins.
4. The proteins of Claim 2 wherein said proteins are secreted or membrane proteins.
5. A vaccine for *Plasmodium falciparum* infection comprising a nucleotide sequence of Claim 1.
6. A vaccine for *Plasmodium falciparum* infection comprising a protein of Claim 2.
7. A vaccine for *Plasmodium falciparum* infection comprising a nucleotide sequence encoding a rifin of Claim 3.
- 10 8. A vaccine for *Plasmodium falciparum* infection comprising a rifin polypeptide of Claim 3.
9. A vaccine for *Plasmodium falciparum* infection comprising a nucleotide sequence encoding a secreted or membrane protein of Claim 4.
10. A vaccine for *Plasmodium falciparum* infection comprising a secreted or membrane protein of Claim 4.
11. A means of detecting infection with *Plasmodium falciparum* by collecting a suspect sample, and subjecting the
15 sample to a diagnostic test comprising the nucleotide sequences of Claim 1, the diagnostic test comprising polymerase chain reaction or nucleic acid hybridization.
12. A means of detecting infection with *Plasmodium falciparum* by collecting a suspect sample, and subjecting the sample to a diagnostic test comprising polyclonal antisera or a monoclonal antibody raised to immunogens comprising the protein sequences of Claim 2, the diagnostic test comprising Western blot analysis or enzyme-
20 linked immunoassay (ELISA).
13. A means of detecting infection with *Plasmodium falciparum* by collecting a suspect sample, and subjecting the sample to a diagnostic test comprising the nucleotide sequences encoding the rifins of Claim 3, the diagnostic test comprising polymerase chain reaction or nucleic acid hybridization.
14. A means of detecting infection with *Plasmodium falciparum* by collecting a suspect sample, and subjecting the
25 sample to a diagnostic test comprising polyclonal antisera or a monoclonal antibody raised to immunogens comprising the rifins of Claim 3, the diagnostic test comprising Western blot analysis or enzyme-linked immunoassay (ELISA).
15. A means of detecting infection with *Plasmodium falciparum* by collecting a suspect sample, and subjecting the

sample to a diagnostic test comprising the nucleotide sequences comprising the secreted and membrane proteins of Claim 4, the diagnostic test comprising polymerase chain reaction or nucleic acid hybridization.

16. A means of detecting infection with *Plasmodium falciparum* by collecting a suspect sample, and subjecting the sample to a diagnostic test comprising polyclonal antisera or a monoclonal antibody raised to immunogens comprising the secreted or membrane proteins of Claim 3, the diagnostic test comprising Western blot analysis or enzyme-linked immunoassay (ELISA).
17. Polyclonal antisera raised against polypeptides comprising the protein sequences of Claim 2.
18. Monoclonal antibodies raised against polypeptides comprising the protein sequences of Claim 2.
19. The use of proteins or fragments thereof in Claim 2 for the identification of drugs to treat or prevent *Plasmodium falciparum* infection.
20. A method of use of rifins or fragments thereof in Claim 3 for the identification of drugs to treat or prevent *Plasmodium falciparum* infection.
21. A method of use of secreted or membrane proteins or fragments thereof in Claim 4 for the identification of drugs to treat or prevent *Plasmodium falciparum* infection.
22. A method of use of proteins or fragments thereof in Claim 2 for the identification or diagnosis of drug resistance in *Plasmodium falciparum*.
23. The A method of use of rifins or fragments thereof in Claim 3 for the identification of drug resistance in *Plasmodium falciparum*.
24. A method of use of secreted or membrane proteins or fragments thereof in Claim 4 for the identification of drug resistance in *Plasmodium falciparum*.

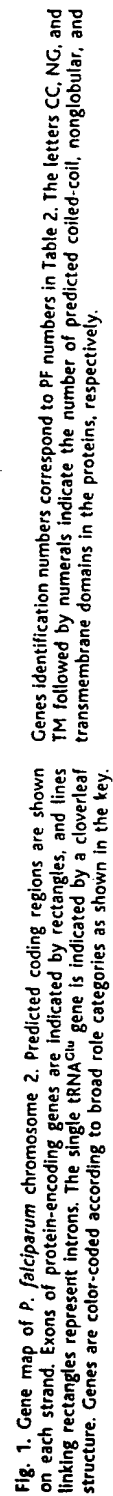


Fig. 1. Gene map of *P. falciparum* chromosome 2. Predicted coding regions are shown on each strand. Exons of protein-encoding genes are indicated by rectangles, and lines linking rectangles represent introns. The single tRNA^{cys} gene is indicated by a cloverleaf structure. Genes are color-coded according to broad role categories as shown in the key.

1

[illegible]

Fig. 2. Multiple alignment of the predicted 5'-3' exonuclease (PF0180w) encoded in chromosome 2 with homologous bacterial exonuclease domains showing the large nonglobular insert in *Plasmodium*. The alignment was constructed with the profile alignment option of CLUSTALW (34). The alignment column shading is based on a 100% consensus, which is shown underneath the alignment; h indicates hydrophobic residues (A, C, F, I, L, M, V, W, and Y; yellow background), u indicates "tiny" residues (G, A, and S; green background), o indicates hydroxy residues (S and T), c indicates charged residues (D, E, K, R, and H), and + indicates positively charged residues (K and R; purple coloring) (35). The aspartates involved in metal coordination have a red background and inverse type. Secondary structure elements derived from the crystal structure of *Thermus aquaticus* DNA polymerase (18) are shown above the alignment (H indicates α helix, and E indicates extended conformation, or β strand). 5'-3'-exo-Aae is a stand-alone exonuclease from *Aquifex aeolicus*, and the remaining bacterial sequences are the NH₂-terminal domains of DNA polymerase I.

Fig. 3

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 Pro Asn Thr Arg Leu Leu Cys Glu Cys Glu Leu Tyr Ser Pro Ala Asn
 35 40 45
 Tyr Asp Ser Asp Pro Glu Met Lys Arg Val Met Gln Gln Phe Val Asp
 50 55 60
 Arg Thr Thr Gln Arg Phe His Glu Tyr Asp Glu Arg Met Lys Thr Thr
 65 70 75 80
 Arg Gln Lys Cys Lys Asp Lys Cys Asp Lys Glu Ile Gln Asn Ile Ile
 85 90 95
 Leu Lys Asp Lys Leu Glu Lys Gln Met Glu Gln Gln Leu Thr Thr Leu
 100 105 110
 Glu Thr Lys Ile Asp Thr Asn Asp Ile Pro Thr Cys Val Cys Glu Lys
 115 120 125
 Ser Leu Ala Asp Lys Thr Glu Lys Phe Cys Leu Asn Cys Gly Val Gln
 130 135 140
 Leu Gly Gly Gly Val Leu Gln Ala Ser Gly Leu Leu Gly Gly Ile Gly
 145 150 155 160
 Gln Leu Gly Leu Asp Ala Trp Lys Ala Ala Ala Leu Val Thr Ala Lys
 165 170 175
 Glu Leu Ala Glu Lys Ala Gly Ala Ala Lys Gly Leu Ala Glu Gly Asn
 180 185 190
 Ala His Gly Met Lys Ile Val Ile His His Leu Lys Glu Leu His Ile
 195 200 205
 Asp Lys Leu Val Pro Gly Ile Cys Glu Lys Ile Ser Ser Thr Gly His
 210 215 220
 Tyr Ala Asn Ile Thr Asn Phe Ala Asn Thr Ile Ile Gln Gln Arg Gly
 225 230 235 240
 Thr Met Cys Gly Ala Ser Gly Lys Asn Leu Gly Lys Asp Met Cys Thr
 245 250 255
 Lys Ile Ser Ile Lys Leu Gly Thr Leu Lys Pro Asp Gly Ile Arg Pro
 260 265 270
 Gly Leu Pro Asp Lys Asp Ala Val Thr Lys Val Leu Asn Gly Leu Val
 275 280 285
 Glu Gln Ala Asp Lys Ala Ala Ala His Val Thr Lys Thr Thr Ser Glu
 290 295 300
 Ser Val Thr Ala Ala Ile Lys Ala Arg Glu Thr Ala Leu Ile Glu Gly

10

<400> 7	Met	Lys	Asp	His	Tyr	Ile	Asn	Ile	Leu	Leu	Phe	Ala	Leu	Pro	Leu	Asn
1					5					10					15	
Ile	Leu	Val	Tyr	Asn	Gln	Arg	Ser	Tyr	Tyr	Ile	Thr	Pro	Arg	His	Thr	
			20					25					30			
Glu	Thr	Asn	Arg	Ser	Leu	Cys	Glu	Cys	Glu	Leu	Tyr	Ser	Pro	Thr	Asn	
		35					40					45				
Tyr	Asp	Ser	Asp	Pro	Glu	Met	Lys	Arg	Val	Met	Gln	Gln	Phe	Glu	Asp	
	50					55					60					
Arg	Thr	Ser	Gln	Arg	Phe	His	Glu	Tyr	Glu	Glu	Arg	Met	Gln	Ser	Lys	
65					70					75					80	
Arg	Met	Gln	Cys	Lys	Glu	Gln	Cys	Asp	Lys	Glu	Ile	Gln	Lys	Ile	Ile	
				85					90					95		
Leu	Lys	Asp	Lys	Leu	Glu	Lys	Glu	Leu	Met	Asp	Lys	Phe	Asp	Thr	Leu	
			100					105					110			
His	Thr	Asp	Ile	Gln	Ser	Asp	Ala	Ile	Pro	Thr	Cys	Val	Cys	Glu	Lys	
		115					120					125				
Ser	Leu	Ala	Asp	Lys	Val	Glu	Lys	Gly	Cys	Leu	Arg	Cys	Gly	Tyr	Gly	
	130					135					140					
Leu	Gly	Thr	Val	Ala	Pro	Thr	Val	Gly	Leu	Ile	Gly	Ala	Ile	Ala	Val	
145					150					155					160	
Asn	Glu	Trp	Thr	Lys	Ala	Ala	Thr	Ala	Ala	Ala	Thr	Gln	Lys	Gly	Ile	
				165					170					175		
Glu	Ala	Gly	Ile	Asn	Val	Val	Ile	Asp	Thr	Leu	Lys	Arg	Leu	Phe	Asn	
			180					185					190			
Ile	Glu	Val	Val	Thr	Asp	Leu	Lys	Trp	Lys	Thr	Leu	Ile	Thr	Ala	Gln	
		195					200					205				
Asn	Tyr	Thr	Asp	Lys	Ile	Leu	Val	Gly	Asp	Val	Ile	Arg	Lys	Leu	Gly	

210					215					220					
Asn	Thr	Leu	Cys	Gly	Gly	Ser	Glu	Asp	Thr	Ala	Gly	Gly	Phe	Cys	Leu
225					230					235					240
Phe	Thr	Val	Lys	Ala	Asn	Thr	Leu	Pro	Gln	Ala	Ile	Asn	Gly	His	Val
				245					250					255	
Thr	Lys	Ala	Ile	Ser	Glu	Gly	Thr	Ala	Glu	Val	Val	Lys	Val	Thr	Glu
			260					265					270		
Ala	Glu	Met	Gly	Lys	Val	Thr	Thr	Ser	Ala	Gly	Ala	Tyr	Ser	Thr	Gly
		275					280					285			
Ile	Ile	Val	Ser	Val	Val	Ala	Ile	Val	Val	Ile	Val	Leu	Ile	Met	Ile
	290					295					300				
Ile	Ile	Tyr	Leu	Ile	Leu	Arg	Tyr	Arg	Arg	Lys	Arg	Lys	Met	Thr	Lys
305					310					315					320
Lys	Met	Gln	Phe	Met	Lys	Leu	Leu	Asn	Glu						
				325					330						

<210> 8
 <211> 248
 <212> PRT
 <213> Plasmodium falciparum

<400> 8
 Met Lys Arg Lys Lys Lys Lys Lys Asn Ile His Val Tyr Thr Tyr Ile
 1 5 10 15
 Leu His Leu Tyr Ile Pro Ile Tyr Pro Tyr Met His Lys Pro Thr Cys
 20 25 30
 Ile His Thr Tyr Ile Tyr Thr Asn Thr Tyr Ile Leu Ile Phe Ile Tyr
 35 40 45
 Arg Lys Lys Pro Asn Ile Thr Ser Gly Arg Thr Asn Leu Phe Arg Val
 50 55 60
 Ile Asp Ile Pro Gln Asn Asp Tyr Asp Ile Pro Thr Thr Lys Ser Ser
 65 70 75 80
 Asn Arg Tyr Val Pro Tyr Glu Ser Asp Arg Tyr Val Gly Lys Thr Tyr
 85 90 95
 Ile Tyr Val Glu Gly Glu Glu Thr Asp Asp Tyr Ser Tyr Ile Arg Asp
 100 105 110
 Ile Tyr Ser Ser Asp Ile Thr Ser Ser Ser Glu Ser Glu Tyr Glu Glu
 115 120 125
 Ile Asp Leu Asn Asp Ile Tyr Val Ser Gly Ser Pro Lys Tyr Lys Met
 130 135 140
 Phe Ile Glu Val Val Leu Glu Pro Leu Asn Arg Asp Thr Phe Asn Leu
 145 150 155 160
 Ser Ser Gly Asn Thr Ser Thr Asn Lys Leu Thr Asp Asn Glu Trp Asn
 165 170 175
 Gln Trp Lys Gln Asp Phe Ile Glu Gln Tyr Leu Thr His Ile Gly Ser
 180 185 190
 Ala Val Pro Leu Tyr Met Ser Tyr Lys Leu Ile Ile Cys Ile Cys Ile
 195 200 205
 Pro Lys Leu Ile Phe Tyr Met Leu Leu Trp Met Lys Asn Leu Leu Leu

210 215 220
 His Gln Tyr Lys Ile Asp Phe Leu Val Val Val Ile Asn Lys Leu Leu
 225 230 235 240
 Ile Ile Leu Ile Gly Ile Phe Glu
 245

<210> 9
 <211> 172
 <212> PRT
 <213> Plasmodium falciparum

<400> 9
 Met Asn Glu Glu Ala Ile Lys Lys Tyr Gln Gln Thr His Asp Pro Tyr
 1 5 10 15
 Glu Gln Leu Lys Asp Val Val Glu Lys Asn Gly Arg Lys Tyr Thr Ser
 20 25 30
 Gly Asn Gly Ala Glu Pro Met Ser Thr Ile Glu Lys Asp Leu Leu Glu
 35 40 45
 Thr Tyr Glu Glu Met Phe Gly Asp Glu Ser Asn Thr Leu Lys Ser Gly
 50 55 60
 Met Ser Pro Asn Val Asp Glu Lys Ser Ser Ala Cys Glu Cys Ala Asp
 65 70 75 80
 Ile Asn Asn Ile Lys Leu Gly Lys Thr Lys Gly Arg Asp Lys Tyr Leu
 85 90 95
 Lys His Leu Lys Gly Arg Cys Thr Arg Gly Ile Tyr Ile Ser Ser Leu
 100 105 110
 Thr Thr Val Ile Leu Thr Thr Ile Ala Leu Tyr Ala Ala Arg Ala Ala
 115 120 125
 Ala Ile Ala Thr Phe Arg Glu Pro Tyr Ser Ala Cys Ala Ala Phe Val
 130 135 140
 Ser Ile Phe Asn Met Leu Ser Arg Glu Thr Val Ile Glu Leu Phe Lys
 145 150 155 160
 Gln Ala Leu Glu Tyr Val His Leu Val Leu Leu Ile
 165 170

<210> 10
 <211> 312
 <212> PRT
 <213> Plasmodium falciparum

<400> 10
 Met Lys Leu Asn Tyr Thr Lys Ile Leu Leu Phe Phe Phe Pro Leu Asn
 1 5 10 15
 Ile Leu Ala Asn Asn Asn Lys Asn Lys Pro Ser Ile Thr Gln Arg His
 20 25 30
 Thr Pro Arg Tyr Thr Ser Arg Val Leu Ser Glu Cys Asp Ile Arg Ser
 35 40 45
 Ser Ile Tyr Asp Asn Asp Ala Glu Met Lys Ser Val Lys Glu Thr Phe
 50 55 60
 Asp Arg Gln Thr Ser Gln Arg Phe Glu Glu Tyr Glu Glu Arg Met Lys
 65 70 75 80

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<210> 11
<211> 356
<212> PRT
<213> Plasmodium falciparum
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Arg Leu Ile Lys Asn Arg Gln Lys Cys Lys Asp Gln Cys Asp Lys Asp
85 90 95

Ile Gln Lys Ile Ile Leu Lys Asp Lys Ile Glu Lys Glu Leu Thr Lys
 100 105 110
 Gln Leu Glu Ala Leu Glu Val Asp Ile Thr Thr Glu Asp Ile Pro Ala
 115 120 125
 Cys Val Cys Lys Lys Ser Val Glu Asp Lys Val Gly Lys Asn Cys Leu
 130 135 140
 Lys Cys Gly Gly Ile Leu Gly Gly Gly Ile Pro Gly Leu Gly Val Leu
 145 150 155 160
 Gly Ala Tyr Ala Val Asn Ser Met Val Gln Val Ala Met Asp Ala Ala
 165 170 175
 Lys Lys Ala Ala Ile Ala Glu Gly Ala Glu Ala Gly Ile Ala Glu Gly
 180 185 190
 Ile Lys Val Ala Ile Gln Gly Val Pro Lys Lys Phe Leu Leu Tyr Thr
 195 200 205
 Leu Asn Gly Lys Glu Leu Gln Ala Val Ile Asn Ala Asn Asn Phe Gln
 210 215 220
 Asn Pro Ser Phe Phe Tyr Gly Glu Ile Met Ala Glu Tyr Val Ser Trp
 225 230 235 240
 Lys Lys Ser Asp Met Val Asn Ser Tyr Gly Leu Phe Ser Phe Ile Glu
 245 250 255
 Glu Ser Cys Glu Asn Asn Pro Asp Lys Ile Met Lys Phe Ile Leu Ala
 260 265 270
 Asn Ser Asn Asp Ile Ala Lys Asp Ala Gly Lys Ala Ala Thr Lys Met
 275 280 285
 Thr Thr Gln Thr Thr Glu Ala Leu Thr Leu Lys Lys Thr Ala Glu Ala
 290 295 300
 Thr Ser Thr Ser Ala Ile Phe Ser Asn Pro Ile Val Ile Ser Phe Ile
 305 310 315 320
 Val Leu Val Ile Ile Val Leu Ile Leu Leu Ile Ile Tyr Leu Ile Leu
 325 330 335
 Arg Tyr Arg Arg Lys Arg Lys Met Lys Lys Lys Leu Gln Tyr Leu Lys
 340 345 350
 Leu Leu Lys Glu
 355

<210> 12
 <211> 290
 <212> PRT
 <213> Plasmodium falciparum

<400> 12
 Met Lys Met Tyr Tyr Leu Lys Met Leu Leu Phe Thr Phe Leu Ile Asn
 1 5 10 15
 Thr Leu Val Leu Ile Gln Asn Asn Thr Gln Arg Thr Thr Ile Asn Ser
 20 25 30
 Arg Leu Leu Ala Gln Thr Gln Asn Lys Asn Pro His Tyr His Asn Asp
 35 40 45
 Pro Glu Leu Lys Glu Ile Ile Asp Lys Leu Asn Glu Glu Ala Ile Lys
 50 55 60

Lys Tyr Gln Gln Thr His Asp Pro Tyr Glu Gln Leu Lys Asp Val Val
 65 70 75 80
 Glu Lys Asn Gly Thr Lys His Val Gly Gly His Val Ser Glu Pro Met
 85 90 95
 Ser Thr Ile Glu Lys Glu Leu Leu Glu Thr Tyr Glu Asp Val Phe Gly
 100 105 110
 Asp Lys Asn His Val Met Leu Lys Ser Gly Arg Tyr Pro Asn Asp Asp
 115 120 125
 Asp Lys Ser Asp Asp Ser Ser Ser Cys Glu Cys Thr Asp Val Asn Asn
 130 135 140
 Thr Lys Leu Glu Lys Thr Lys Gly Lys Asp Lys Tyr Leu Lys His Leu
 145 150 155 160
 Lys His Arg Cys Ile Gly Gly Ile Cys Ser Cys Ser Val Gly Ser Ala
 165 170 175
 Phe Leu Thr Ile Leu Gly Cys Ala Phe Ala Lys Ser Ala Ala Leu Thr
 180 185 190
 Ala Phe Ala Ser Ser Glu Ser Thr Lys Thr Cys Ile Ser Ser Val Ala
 195 200 205
 Ile Tyr Asn Leu Phe Gln Asn Ser Thr Met Leu Ser Ala Leu Lys Thr
 210 215 220
 Val Gly Gly Thr Cys Ala Asn Gly Ala Pro Asp Ile Ala Gly Thr Val
 225 230 235 240
 Ser Thr Leu Ala Ser Ala Ala Phe Pro Pro Tyr Gly Ile Ala Ala Leu
 245 250 255
 Val Leu Leu Ile Leu Ala Val Ala Leu Ile Ile Leu Tyr Ile Trp Leu
 260 265 270
 Tyr Arg Arg Arg Lys Asn Ser Trp Lys His Glu Cys Lys Lys His Leu
 275 280 285
 Cys Arg
 290

<210> 13
 <211> 156
 <212> PRT
 <213> Plasmodium falciparum

<400> 13
 Met Ser Cys Asn Tyr Ile Lys Leu Ser Leu Phe Ser Ile Val Leu Cys
 1 5 10 15
 Ile Phe Ile Ile Thr His Lys Leu Cys Leu Glu Lys Ile Pro His Asn
 20 25 30
 Lys Arg Asn Thr Val Asp Ile Leu Asn Ala Arg His Lys Arg Leu Leu
 35 40 45
 Ser Glu Ser Glu Asp Glu Tyr Ile Phe Lys Thr His Ser Gly Glu Asn
 50 55 60
 Ser Ser Thr Gln Pro Ile Asp Asn Lys Ser His Glu Asn Ile Thr Glu
 65 70 75 80
 Tyr His Lys Thr Ser Ser Ser Phe Arg Leu Asn Glu Glu Tyr Pro Gln
 85 90 95

Asn His Asn Tyr Glu Ser Glu Gln Ile Lys Trp Glu Asn Glu Lys Asn
 100 105 110
 Asn Lys Leu Leu Leu Gln Lys Leu Arg Lys Lys Ser His Tyr Arg Asn
 115 120 125
 Ile Lys Ile Ile Phe Ile Thr Ala Leu Ser Met Met Glu Phe Pro Val
 130 135 140
 Leu Pro Met Leu Tyr Ile Lys Tyr Tyr Ile His Lys
 145 150 155

<210> 14
 <211> 254
 <212> PRT
 <213> Plasmodium falciparum

<400> 14
 Met Arg Ser Leu Lys Ser Cys Phe Phe Lys His Asn Trp Asn Ile Cys
 1 5 10 15
 Leu Leu Trp Ile Arg Val Ile Leu Ser Ser Ser Leu Leu Ile Ser Leu
 20 25 30
 Ile Phe Tyr Asn Asn Val Phe Asn Cys Lys Ile Lys Tyr Gly Lys Ser
 35 40 45
 His Thr Glu Asp Ser Phe Asn Leu Ile Lys Leu Arg Ser Leu Ser Glu
 50 55 60
 Tyr Asn Lys Asn Tyr Asp Gly Glu Tyr Tyr Asp Ile Leu Lys Leu Asn
 65 70 75 80
 Ile Asp Asn Asp Lys Leu Lys Gln Cys Ala Met Arg Ile His Pro Glu
 85 90 95
 Val Glu Leu Ile Gly Lys Glu Ser Glu Cys Phe Gly Glu Asn Met Asn
 100 105 110
 Glu Val Tyr Ile Lys Leu Ile Thr Asp Leu Lys Pro Asp Leu Ile Asn
 115 120 125
 Val Asn Ala Thr Ser Lys Lys Glu Leu Leu Asn Glu Trp Asp Phe Ile
 130 135 140
 Met Asn Asn Phe Asn Gly Lys Asn Val Glu Lys Ile Val Glu Ile Lys
 145 150 155 160
 Asp Glu Thr Asn Asp Glu Thr Asp Asn Glu Thr Asn Asp Glu Thr Asp
 165 170 175
 Asn Glu Thr Asn Asp Glu Lys Ser Ile Lys Lys Lys Lys Lys Lys Arg
 180 185 190
 Lys Gly Lys Pro Arg Ile Arg Tyr Ile Ala Glu Met Val Gly Tyr Gly
 195 200 205
 Thr Ile Cys Ile Ala Gly Ala Pro Val Ile Leu Thr Leu Ile Ile Val
 210 215 220
 Gly Gly Phe Ile Trp Gly Val Lys Gly Thr Lys Tyr Ala Arg Lys Tyr
 225 230 235 240
 Phe Asn Ile Ile Lys Lys Leu Leu Phe Thr Lys Val Pro Phe
 245 250

<210> 15
 <211> 369

<212> PRT

<213> Plasmodium falciparum

<400> 15

Met Asp Thr Lys Asn Met Leu Thr Lys Lys Met Lys Ile Glu Lys Ser
 1 5 10 15

Ala Phe Asn Lys Tyr Ser His Leu Phe Thr Ser Leu Phe Asn Tyr Asp
 20 25 30

Leu Trp Glu Arg Phe Glu Ile Ser Tyr Tyr Met Leu Ser Gly Asn Ser
 35 40 45

Glu Tyr Thr Asn Asp Leu Asp Leu Glu Ile Asn Lys Lys Leu Val Leu
 50 55 60

Leu Asn Asn Glu Thr Asn Ser Glu Leu Arg Ile His Thr Ile Trp His
 65 70 75 80

Asn Val Met Lys Ser Glu Lys Glu Lys Phe Asn Ser Trp Tyr Met Tyr
 85 90 95

Phe Asn Asn Asn Phe Tyr Leu Leu Arg Lys Lys Tyr Lys Thr Pro Phe
 100 105 110

Asn Tyr Ala Lys Pro Thr Cys Asn Gln Cys Asn Glu Phe Phe Ala Leu
 115 120 125

Ser Lys Lys Tyr Ile Glu Asn Ser Phe Asn Lys Val Phe Asn Lys Trp
 130 135 140

Phe Lys Asn Asn Val Tyr Leu Asp Val Asn Glu Phe Arg Val Ile Val
 145 150 155 160

Met Ala Cys Arg Leu Leu Trp Arg Lys Thr Leu Ala Thr Leu Lys Glu
 165 170 175

Glu Gly Met Leu Tyr Leu Gln Lys Pro Phe Glu Ala Leu His His Glu
 180 185 190

Arg Lys Lys Ile His Lys Arg Gly Gly Arg Ala Leu Lys Phe Lys Ala
 195 200 205

Glu Glu Phe Tyr Glu Lys Asn Pro Asp Leu Val Thr Tyr Lys Gly Cys
 210 215 220

His Phe Leu Asn Ser Leu Lys Asn Val Asn Leu Glu Glu Lys Tyr Asp
 225 230 235 240

Asp Asp Asp Glu Ala Glu Asn Glu Lys Lys Lys Gln Glu Lys Ile Lys
 245 250 255

Asp Asn Lys Lys Glu Glu Glu Asp Ala Tyr Glu Asp Asn Glu Asp Asn
 260 265 270

Glu Asp Tyr Asp Asp Tyr Asp Asp Tyr Asp Asp Tyr Asp Glu Glu Gln
 275 280 285

Tyr Asp Lys Asn Gly Glu Val Ile Val Gly Ala Asn Glu Asp Pro Ser
 290 295 300

Tyr Glu Tyr Asn Tyr His Tyr Glu Glu Pro Phe Ile Leu Thr Pro Glu
 305 310 315 320

Leu Ile Glu Ala Ile Glu Arg Ala Val Glu Arg Asp Val Glu Arg Glu
 325 330 335

Val Glu Lys Arg Ser Glu Lys Leu Ile Asp Asp Lys Trp Lys Lys Arg
 340 345 350

Leu Ala Lys Glu Ile Arg Asp Lys Pro Ile Lys Lys Val Arg Phe Asn
 355 360 365

Leu

<210> 16

<211> 900

<212> PRT

<213> Plasmodium falciparum

<400> 16

Met Lys Cys Lys Arg Asn Val Phe Phe Ser Lys Ser Leu Lys Phe Gly
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 His Ile Ser Val Phe Ile Phe Gly Ile Leu Tyr Gly Val Ile Asn Lys
 20 25 30
 Leu Phe Ile Ser Asp Val Asn Ser Cys Tyr Ser Val Ser Asn Ser Ile
 35 40 45
 Ile Tyr Glu Arg Gln Leu Ser Glu Lys Asp Asn Leu Ser Asn Ser Leu
 50 55 60
 Glu Gln Asn Gly Glu Pro Val Val Ile Gly Gln Phe Phe Ser Leu Pro
 65 70 75 80
 Asn Gly Lys Ser Ile Ser Ile Ser Asp Asp Ile Phe Ile Asp Glu Glu
 85 90 95
 Gln Ser Ile Val Asn Phe Ile Asp Asn Ile Ile Glu Gly Leu Glu Gln
 100 105 110
 Tyr Met Leu Trp Asn Asn Tyr Met Val Ile Pro His Met Lys Gln Tyr
 115 120 125
 Pro Pro Val Phe Asn Asn Asp Lys Asp Ile Glu Leu Asn Asn Lys Val
 130 135 140
 Asp Asn Leu Glu Arg Asn Arg Glu Asp Ile Ile Ile Glu Thr Glu Lys
 145 150 155 160
 Leu Trp Leu Glu Ile Met Lys Asn Glu Lys Asn Lys Phe Ala Ser Leu
 165 170 175
 Lys Cys Lys Leu Phe Asn Gln Tyr Asn Lys Phe Lys Asn Lys His Asn
 180 185 190
 Ile Pro Lys Glu Gln Tyr Glu Lys Gly Cys Asn Leu Cys Lys Lys Leu
 195 200 205
 Ile Glu Ile Gly Glu Lys Tyr Leu Glu Leu Lys Leu Asn Ser Val Phe
 210 215 220
 Tyr Glu Trp Tyr Asp Lys Lys Val Ile Cys Val Glu Asp Phe Lys Arg
 225 230 235 240
 Lys Ile Glu Arg Cys Arg Ile Ala Trp Lys Ala Leu Ser Asn Lys Ile
 245 250 255
 Gln Tyr Leu Cys Asn Lys Ile Ile Ile Asn Cys Leu Asp Lys Ile Lys
 260 265 270
 Tyr Met Asn Glu Met Lys Ile Met Lys Ala Lys Lys Lys Ala Val Lys
 275 280 285
 Val Val Glu Lys Pro Glu Pro Lys Lys Lys Gln Glu Glu Asn Leu Ser
 290 295 300

Met	Val	Glu	Gly	Leu	Asn	Cys	Phe	Glu	Glu	Asn	His	Lys	Ile	Ile	Cys	
305					310					315					320	
Ile	Lys	Asn	Asn	Asp	Leu	Ile	Ser	Gly	Cys	Glu	Asn	Val	Asp	Thr	Gln	
				325					330					335		
Gly	Cys	Pro	Ser	Val	Asn	Glu	Ile	Ile	Asn	Ser	Ser	Ser	Ile	Asn	Tyr	
			340					345					350			
Tyr	Glu	Lys	Met	Arg	Asp	Gly	Leu	Tyr	His	Asp	Asp	Glu	Glu	Tyr	Asp	
		355					360					365				
Ala	Leu	Val	Thr	Asp	Asp	Asp	Leu	Ile	Phe	Glu	Met	Phe	Asp	Glu	Asn	
	370					375					380					
Lys	Glu	Asp	Asp	Ile	Ile	Glu	Glu	Ser	Glu	Asn	Asn	Glu	Ser	Asp	Glu	
385					390					395					400	
Asp	Asp	Leu	Leu	Val	Glu	Glu	Ser	Glu	Ser	Asn	Glu	Ser	Asp	Glu	Asp	
				405					410					415		
Asp	Leu	Leu	Val	Glu	Glu	Tyr	Glu	Asn	Asn	Glu	Ser	Asp	Glu	Asp	Glu	
			420					425					430			
Ser	Ile	Ile	Glu	Glu	Tyr	Gly	Glu	Ala	Gln	Glu	Glu	Val	Ala	Ile	Ser	
		435					440					445				
Ser	Ser	Glu	Val	Val	Asp	Asp	Glu	Phe	Thr	Thr	Asn	Glu	Asp	Ile	Glu	
		450				455					460					
Ser	Glu	Glu	Arg	Tyr	Ser	Leu	Asp	Lys	Glu	Ala	Asn	Arg	Leu	Leu	Phe	
465					470					475					480	
Lys	Asn	Asp	Ile	Tyr	Asn	Ile	Trp	Phe	Ser	Asp	Leu	Ser	Asn	Ile	Tyr	
				485					490					495		
Val	Asp	Thr	Thr	Tyr	Tyr	Asp	Ile	Leu	Asn	Val	Tyr	Pro	Thr	Ser	Glu	
			500					505					510			
Leu	Ser	Glu	Ile	Lys	Ser	Asn	Tyr	Tyr	Asn	Leu	Ala	Leu	Lys	Tyr	Asn	
		515					520					525				
Pro	Glu	Ser	Asn	Leu	Gly	Asn	Ala	Glu	Ala	Leu	Thr	Lys	Phe	Arg	Asp	
	530					535					540					
Ile	Asn	Glu	Ala	Tyr	Gln	Ile	Leu	Ser	Leu	Asp	Gln	Arg	Arg	Met	Asn	
545					550					555					560	
Tyr	Asn	Lys	Tyr	Gly	Leu	Asn	Ala	Thr	Lys	Asp	Met	Phe	Leu	Ile	Asp	
				565					570					575		
Pro	Ser	Ile	Phe	Tyr	Val	Lys	Met	Leu	Ser	Ile	Glu	Lys	Phe	Tyr	Asp	
			580					585					590			
Tyr	Ile	Gly	Thr	Thr	Gln	Ile	Glu	Ser	Phe	Leu	Lys	Val	Leu	Ser	Glu	
		595					600					605				
Lys	Asn	Ile	Ala	Leu	His	Glu	Leu	Glu	His	Arg	Leu	Glu	Asp	Ile	Met	
	610					615					620					
Asn	Leu	Met	Tyr	Glu	Gln	Gln	Glu	Val	Arg	Gln	Val	Lys	Ile	Ala	Leu	
625					630					635					640	
Tyr	Leu	Arg	Asn	Lys	Leu	Gln	Pro	Tyr	Val	Asp	Gly	Asp	Asp	Gln	Trp	
				645					650					655		
Lys	Lys	His	Met	Glu	Glu	Glu	Val	Lys	Lys	Leu	Asn	Lys	Ser	Ile	Phe	
			660					665					670			
Gly	Thr	Phe	Phe	Leu	Lys	Ser	Ile	Gly	Trp	Ile	Tyr	Thr	Asn	Leu	Thr	

675 680 685
 Gln Cys Tyr Arg Glu Asp Asn Gly His Ser Phe Gly Val Asn Leu Lys
 690 695 700
 Leu Ala Asn Met Glu Phe Glu Asn Arg Asn Lys Lys Asn Gln Leu Lys
 705 710 715 720
 Val Ser Lys Ser Met Arg Asn Leu Leu Ser Ile Ile Lys Glu Tyr Ile
 725 730 735
 Pro Arg Asn Glu Asn Ile Thr Gly Leu Val Lys Lys Ile Glu Tyr Leu
 740 745 750
 Lys Ser Glu Asn Asp Ile Glu Asn Asn Ile Ser Asn Val Asn Glu Lys
 755 760 765
 Ser Ser Ser Asn Asp Asn Ser Ser Asp Asp Glu Asn Gln Asn Glu Asn
 770 775 780
 Glu Asn Glu Asn Gln Asn Glu Asn Glu Asn Glu Asn Arg Lys
 785 790 795 800
 Asp Leu Lys Leu Leu Ser Asp Asn Glu Lys Arg Lys Val Leu His Phe
 805 810 815
 Met Ile Lys Asn Ile Lys Asn Val Val Gln Gly Asp Ile Glu Leu Thr
 820 825 830
 Ile Arg Tyr Ala Ala Glu Lys Val Leu Phe Asp Glu Gly Val Asp Lys
 835 840 845
 Glu Thr Gln Leu Lys Arg Val Glu Ala Leu Glu Ile Leu Gly Asn Ile
 850 855 860
 Met Lys Thr Cys Ser Lys Glu Asn Lys Asn Trp Glu Lys Asp Gln Glu
 865 870 875 880
 Ala Asp Ile Glu Asn Ile Ile Glu Lys Val Ile Asn Val Ser Lys Met
 885 890 895
 Val Asn Asn Glu
 900

<210> 17
 <211> 354
 <212> PRT
 <213> Plasmodium falciparum

<400> 17
 Met Leu Ile Cys Ile Val Tyr Tyr Asn Phe Arg Lys Ser Ser Lys Ile
 1 5 10 15
 Lys Phe Arg Arg Asp Tyr Tyr Ser Ile Leu Gly Val Ser Arg Asp Cys
 20 25 30
 Thr Asn Glu Asp Ile Lys Lys Ala Tyr Lys Lys Leu Ala Met Lys Trp
 35 40 45
 His Pro Asp Lys His Leu Asn Ala Ala Ser Lys Lys Glu Ala Asp Asn
 50 55 60
 Met Phe Lys Ser Ile Ser Glu Ala Tyr Glu Val Leu Ser Asp Glu Glu
 65 70 75 80
 Lys Arg Asp Ile Tyr Asp Lys Tyr Gly Glu Glu Gly Leu Asp Lys Tyr
 85 90 95
 Gly Ser Asn Asn Gly His Ser Lys Gly Phe Lys Arg Thr Asp Pro Asn

100 105 110
 Asp Val Phe Ser Lys Phe Phe Lys Thr Glu Thr Lys Phe Tyr Ser Asn
 115 120 125
 Ser Pro Ser Ser Pro Asn Gly Asn Val Leu Phe Glu Gly Ser Leu Phe
 130 135 140
 Gly Gly Ser Ser Pro Phe Ser Gly Ile Asn Pro Arg Ser Gly Ser Gly
 145 150 155 160
 Tyr Thr Thr Ser Lys Ser Phe Ser Ser Met Asp Lys Val Glu Glu Tyr
 165 170 175
 Val Val Pro Leu Tyr Val Thr Leu Glu Asp Leu Tyr Asn Gly Thr Gln
 180 185 190
 Lys Lys Leu Lys Val Thr Arg Lys Arg Cys Gln Gly Val Thr Thr Tyr
 195 200 205
 Asp Asp Glu Phe Phe Val Thr Val Asp Ile Lys Ser Gly Trp Cys Asp
 210 215 220
 Gly Thr Thr Ile Thr Tyr Lys Gly Glu Gly Asp Gln Thr Ser Pro Met
 225 230 235 240
 Ser Asn Pro Gly Asp Leu Val Phe Thr Ile Lys Thr Val Asp His Asp
 245 250 255
 Arg Phe Val Arg Ser Tyr Asn Asp Leu Ile Tyr Arg Cys Pro Ile Thr
 260 265 270
 Leu Glu Gln Ala Leu Thr Gly His Lys Phe Thr Ile Ile Thr Leu Asp
 275 280 285
 Asn Arg Asp Ile Asp Ile Gln Val Asp Glu Ile Val Thr Pro Leu Thr
 290 295 300
 Thr Arg Val Ile Thr Ser Glu Gly Met Pro Tyr Met Glu Asn Pro Lys
 305 310 315 320
 Met Lys Gly Asn Leu Ile Ile Glu Phe Asp Ile Ile Phe Pro Lys Lys
 325 330 335
 Leu Ser Asp Glu Gln Lys Glu Leu Ile Lys Glu Ala Leu Gly Gly Asn
 340 345 350
 Gly Phe

<210> 18
 <211> 2441
 <212> PRT
 <213> Plasmodium falciparum

<400> 18
 Met Ala Thr Ile Lys Lys Tyr His Ile Arg Gly Arg Lys Asn Ile Leu
 1 5 10 15
 Ile Phe Leu Leu Lys Ile Phe Leu Phe Ser Pro Leu Ile Trp Ile Leu
 20 25 30
 Ile Tyr Ser Glu Tyr Phe Thr Val Lys Asn Tyr Asn Lys Ile Asp
 35 40 45
 Asn Val Tyr Asn Ile Phe Glu Ile Arg Leu Lys Arg Ser Leu Ala Gln
 50 55 60
 Val Leu Gly Asn Thr Arg Leu Ser Ser Arg Gly Val Arg Asp Pro Arg

65	70					75					80				
Thr Lys Glu Ala Leu Lys Glu Lys Gln Phe Arg Asp His Lys Arg Lys	85					90					95				
Glu Ala Leu Lys Gln Lys Thr Glu Lys Asn Glu Lys Ala Arg Asn Ala	100					105					110				
Leu Lys Glu Lys Lys Leu Lys Glu Gln Lys Lys Asn Asp Ala Gln Lys	115					120					125				
Ala Lys Asp Leu Thr Lys Lys Glu Ser Gln Asp Ser Ser Ser Glu Lys	130					135				140					
Ser Leu Lys Glu Lys Val Asn Gly Glu Ala Leu Lys Glu Lys Glu Asn	145				150				155					160	
Lys Glu Thr Leu Lys Lys Lys Glu Leu Glu Asn Gln Lys Glu Lys Glu	165							170					175		
Glu Lys Asn Lys Ile Lys Asp Asn Asn Asp Glu Ala Leu Lys Asn Lys	180					185					190				
Gly Asn Asp Lys Asp Asp Lys Lys Ile Val Pro Lys Lys Pro Glu Ser	195					200					205				
Val Glu Lys Asp Leu Lys Glu Met Glu Leu Lys Glu Lys Glu Phe Ile	210				215					220					
Lys Gln His Leu Lys Asp Tyr Glu Glu Arg Lys Glu Lys Arg Arg Asn	225				230				235					240	
Trp Ile Leu Arg Ser Leu Arg Arg Asp Lys Leu Arg Glu Ile Glu Gln	245					250					255				
Leu Glu Lys Leu Asn Ala Gln Leu Glu Ser Ala Ile Asn Glu Leu Lys	260					265					270				
Glu Arg Arg Ala Ser Arg Arg Pro Met Met Val Lys Met Gln Arg Gly	275					280					285				
Met Lys Asp Glu Val Asp Glu Trp Ile Lys Lys Tyr Asp Asp Glu Gln	290				295				300						
Ala Glu Lys Asn Gly Thr Lys Asp Glu Glu Ile Lys Asp Lys Gly Asp	305				310				315					320	
Gly Tyr Glu Glu Ile Val Glu Thr Lys Phe Tyr Gly Met Arg Glu Asn	325					330					335				
Ala Leu Gly Glu Leu Asp Glu Tyr Glu Glu Arg Tyr Glu Lys Lys Arg	340					345					350				
Tyr Tyr Leu Lys Glu Asp Gly Glu Gly Asp Leu Lys Asp Val Glu Glu	355					360					365				
Lys Leu Glu Glu Thr Gly Tyr Gly Phe Arg Glu Lys Phe Pro Thr Thr	370				375					380					
Arg Ile Leu Val Lys Arg Lys Arg Asn Lys Glu Gln Lys Lys Leu Lys	385				390				395					400	
Glu Asp Lys Glu Lys Lys Leu Ile Ala Ala Glu Glu Pro Asp Asp Glu	405					410					415				
Lys Lys Ile Lys Leu Lys Asp Ser Asp Asp Lys Val Val Val Pro Val	420					425					430				
Asn Lys Asn Lys Ser Ser Phe Pro Asp Lys Phe Arg Ala Pro Asp Lys	435					440					445				

Lys	Arg	Thr	Met	Phe	Tyr	Arg	Leu	Ser	Glu	Leu	Phe	Pro	Ile	Val	Pro		
	450					455					460						
Arg	Lys	Asp	Asn	Glu	Leu	Ala	Val	Ser	Gly	Asp	Cys	Met	Asp	Ser	Lys		
465					470					475					480		
Val	Asn	Gly	Lys	Lys	Leu	Lys	Ser	Thr	Phe	Asn	Pro	Phe	Lys	Arg	Arg		
				485					490					495			
Arg	Asn	Lys	Leu	Lys	Glu	Arg	Lys	Met	Gln	Glu	Leu	His	Lys	Phe	Lys		
			500					505					510				
Lys	Asn	Tyr	Lys	Lys	Tyr	Gln	Lys	Leu	Leu	Glu	Arg	Glu	Lys	Arg	Glu		
		515					520					525					
Asn	Pro	Asp	Gly	Glu	Pro	Leu	Asn	Thr	Pro	Glu	Ile	His	Val	Ile	Arg		
	530					535					540						
Pro	Ser	Asp	Leu	Met	Asp	Lys	Gly	Glu	Asn	Lys	Ser	Ala	Gly	His	Pro		
545					550					555					560		
Phe	Lys	Tyr	Gln	Pro	Thr	Lys	Gly	Leu	Lys	Glu	Tyr	Glu	Glu	Ser	His		
				565					570					575			
Val	Ala	Lys	Asp	Tyr	Gln	Leu	Glu	His	Glu	Pro	Pro	Thr	Lys	Leu	Pro		
			580					585					590				
Glu	Tyr	Glu	Lys	Gly	His	Val	Ser	Arg	Glu	Tyr	Gln	Leu	Asp	Asn	Glu		
		595					600					605					
Val	Arg	Asp	Glu	Leu	Pro	Glu	Tyr	Glu	Lys	Gly	His	Val	Ser	Arg	Glu		
	610					615					620						
Tyr	Gln	Leu	Asp	Asn	Glu	Val	Arg	Asp	Glu	Leu	Pro	Glu	Tyr	Glu	Lys		
625					630					635					640		
Gly	His	Val	Ser	Arg	Glu	Tyr	Gln	Leu	Asp	Asn	Glu	Gly	Pro	Ser	Thr		
				645					650					655			
Leu	Lys	Glu	Tyr	Asp	Gln	Thr	Glu	Leu	Ala	Lys	Gly	Lys	Asp	Ile	Thr		
			660					665					670				
Asn	Lys	Pro	His	Glu	Ser	Val	Asp	Glu	Tyr	Asp	Gln	Ser	Glu	Leu	Ala		
		675					680					685					
Lys	Gly	Lys	Asp	Ile	Thr	Asn	Lys	Pro	His	Glu	Ser	Val	Asp	Glu	Tyr		
	690					695					700						
Asp	Gln	Thr	Glu	Leu	Ala	Lys	Gly	Lys	Glu	Val	Thr	Asn	Lys	Pro	His		
705					710					715					720		
Glu	Asn	Leu	Glu	Glu	Tyr	Asn	Glu	Thr	Asp	Leu	Ala	Lys	Gly	Lys	Glu		
				725					730					735			
Val	Thr	Asn	Lys	Pro	His	Glu	Ser	Val	Asp	Glu	Tyr	Asp	Gln	Ser	Glu		
			740					745					750				
Leu	Ala	Lys	Gly	Lys	Asp	Ile	Thr	Asn	Lys	Pro	His	Glu	Ser	Val	Asp		
		755				760						765					
Glu	Tyr	Asp	Gln	Thr	Glu	Leu	Ala	Lys	Gly	Lys	Glu	Val	Thr	Asn	Lys		
	770					775					780						
Pro	His	Glu	Asn	Leu	Glu	Glu	Tyr	Asn	Glu	Thr	Asp	Leu	Ala	Lys	Gly		
785					790					795					800		
Lys	Glu	Val	Thr	Asn	Lys	Ala	His	Glu	Asn	Leu	Glu	Glu	Tyr	Asn	Glu		
				805					810					815			

Thr Asp Leu Ala Lys Gly Lys Glu Val Thr Asn Lys Ala His Glu Asn
 820 825 830
 Leu Glu Glu Tyr Asn Glu Thr Asp Leu Ala Lys Gly Lys Glu Val Thr
 835 840 845
 Asn Lys Ala His Glu Asn Leu Glu Glu Tyr Asn Glu Thr Asp Leu Ala
 850 855 860
 Lys Gly Lys Glu Val Thr Asn Lys Ala Arg Glu Asn Leu Glu Glu Tyr
 865 870 875 880
 Asn Glu Thr Asp Leu Ala Lys Gly Lys Glu Val Thr Asn Lys Ala Arg
 885 890 895
 Glu Asn Leu Glu Glu Tyr Asn Glu Thr Asp Leu Ala Lys Gly Lys Glu
 900 905 910
 Val Thr Asn Lys Ala His Glu Asn Leu Glu Glu Tyr Asn Glu Thr Asp
 915 920 925
 Leu Ala Lys Gly Lys Glu Val Thr Asn Lys Ala His Glu Asn Leu Glu
 930 935 940
 Glu Tyr Asn Glu Thr Asp Leu Ala Lys Gly Lys Glu Val Thr Asn Lys
 945 950 955 960
 Ala His Glu Asn Leu Glu Glu Tyr Asn Glu Thr Asp Leu Ala Lys Gly
 965 970 975
 Lys Glu Val Thr Asn Lys Ala Arg Glu Asn Leu Glu Glu Tyr Asn Glu
 980 985 990
 Thr Asp Leu Ala Lys Gly Lys Glu Val Thr Asn Lys Ala Arg Glu Asn
 995 1000 1005
 Leu Glu Glu Tyr Asn Glu Thr Asp Leu Ala Lys Gly Lys Glu Val Thr
 1010 1015 1020
 Asn Lys Ala Arg Glu Asn Leu Glu Glu Tyr Asn Glu Thr Asp Leu Ala
 1025 1030 1035 1040
 Lys Gly Lys Glu Val Thr Asn Lys Ala Arg Glu Asn Leu Glu Glu Tyr
 1045 1050 1055
 Glu Glu Lys Asp Tyr Met Lys Asn Asn Glu Leu Gln Asn Lys Gly Ser
 1060 1065 1070
 Asp Gly Leu Lys Glu Asn Ala Glu Leu Lys Asn Lys Glu Leu Arg Asn
 1075 1080 1085
 Lys Gly Ser Asp Gly Leu Lys Glu Asn Ala Glu Leu Lys Asn Lys Glu
 1090 1095 1100
 Leu Arg Asn Lys Gly Ser Asp Gly Leu Lys Glu Asn Ala Glu Leu Lys
 1105 1110 1115 1120
 Asn Lys Glu Leu Gln Asn Lys Gly Ser Glu Gly Leu Lys Glu Asn Ala
 1125 1130 1135
 Glu Leu Lys Asn Lys Glu Leu Gln Asn Lys Gly Ser Glu Gly Leu Lys
 1140 1145 1150
 Glu Asn Ala Glu Leu Lys Asn Lys Glu Leu Arg Asn Lys Gly Ser Glu
 1155 1160 1165
 Gly Leu Lys Glu Asn Ala Glu Leu Lys Asn Lys Glu Leu Gln Asn Lys
 1170 1175 1180
 Gly Ser Glu Gly Leu Lys Glu Asn Ala Glu Leu Lys Asn Lys Glu Leu

1185 1190 1195 1200
 Gln Asn Lys Gly Ser Glu Gly Leu Lys Glu Asn Ala Glu Leu Lys Asn
 1205 1210 1215
 Lys Glu Leu Gln Asn Lys Gly Ser Glu Gly Leu Lys Glu Asn Ala Glu
 1220 1225 1230
 Leu Lys Asn Lys Glu Leu Arg Asn Lys Gly Ser Glu Gly Leu Lys Glu
 1235 1240 1245
 Asn Val Tyr Thr Asn Asn Asp Leu Lys Asn Asn Asp Ile Gln Asn Lys
 1250 1255 1260
 Asp Leu Ser Asn Lys Asp Met Lys Asn Lys Glu Leu Leu Asn Lys Asp
 1265 1270 1275 1280
 Ile Ser Asn Lys Asp Met Lys Asn Lys Glu Leu Leu Asn Lys Asp Leu
 1285 1290 1295
 Ser Asn Glu Asp Met Lys Asn Lys Glu Leu Leu Asn Lys Asp Ile Arg
 1300 1305 1310
 Asn Lys Asp Leu Lys Ser Ile Gly Asn Met Glu Gln Gln Asn Thr Gly
 1315 1320 1325
 Leu Lys Asn Thr Pro Ser Lys Gly Gln Gln Asn Thr Gly Leu Lys Asn
 1330 1335 1340
 Thr Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser
 1345 1350 1355 1360
 Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln
 1365 1370 1375
 Gln Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu Arg Gln Gln Asn Thr
 1380 1385 1390
 Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys
 1395 1400 1405
 Asn Thr Pro Ile Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro
 1410 1415 1420
 Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu Arg
 1425 1430 1435 1440
 Gln Gln Asn Thr Gly Leu Lys Asn Ala Ala Asn Lys Gly Gln Gln Asn
 1445 1450 1455
 Thr Gly Leu Lys Asn Thr Pro Ser Lys Gly Gln Gln Asn Thr Gly Leu
 1460 1465 1470
 Lys Asn Thr Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys Asn Thr
 1475 1480 1485
 Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu
 1490 1495 1500
 Gly Gln Gln Asn Asn Asp Leu Lys Asn Thr Pro Asn Glu Arg Gln Gln
 1505 1510 1515 1520
 Asn Thr Gly Leu Lys Asn Thr Ala Ser Lys Gly Gln Gln Asn Thr Gly
 1525 1530 1535
 Leu Lys Asn Ala Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys Asn
 1540 1545 1550
 Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser
 1555 1560 1565

Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu Arg Gln
 1570 1575 1580
 Gln Asn Thr Gly Leu Lys Asn Thr Ala Ser Lys Gly Gln Gln Asn Thr
 1585 1590 1595 1600
 Gly Leu Lys Asn Ala Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys
 1605 1610 1615
 Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Ser Ala
 1620 1625 1630
 Ser Lys Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly
 1635 1640 1645
 Gln Gln Asn Asn Asp Leu Lys Asn Ala Pro Asn Glu Arg Gln Gln Asn
 1650 1655 1660
 Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu
 1665 1670 1675 1680
 Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr
 1685 1690 1695
 Pro Ser Gly Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu
 1700 1705 1710
 Arg Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln
 1715 1720 1725
 Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu Arg Gln Gln Asn Thr Gly
 1730 1735 1740
 Leu Lys Asn Ala Ala Asn Lys Gly Gln Gln Asn Thr Gly Leu Lys Asn
 1745 1750 1755 1760
 Thr Pro Asn Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser
 1765 1770 1775
 Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln
 1780 1785 1790
 Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr
 1795 1800 1805
 Gly Leu Lys Asn Thr Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys
 1810 1815 1820
 Asn Ala Ala Asn Lys Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro
 1825 1830 1835 1840
 Asn Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly
 1845 1850 1855
 Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn
 1860 1865 1870
 Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu
 1875 1880 1885
 Lys Asn Ala Ala Asn Lys Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr
 1890 1895 1900
 Pro Ser Gly Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu
 1905 1910 1915 1920
 Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln
 1925 1930 1935

Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly
 1940 1945 1950
 Leu Lys Asn Thr Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys Asn
 1955 1960 1965
 Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser
 1970 1975 1980
 Glu Gly Gln Pro Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu Gly Gln
 1985 1990 1995 2000
 Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr
 2005 2010 2015
 Gly Leu Lys Asn Ala Ala Asn Lys Gly Gln Gln Asn Thr Gly Leu Lys
 2020 2025 2030
 Asn Thr Pro Asn Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro
 2035 2040 2045
 Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly
 2050 2055 2060
 Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn
 2065 2070 2075 2080
 Thr Gly Leu Lys Asn Ala Ala Asn Lys Gly Gln Gln Asn Thr Gly Leu
 2085 2090 2095
 Lys Asn Thr Pro Asn Glu Arg Gln Gln Asn Thr Gly Leu Lys Asn Thr
 2100 2105 2110
 Pro Asn Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu
 2115 2120 2125
 Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln
 2130 2135 2140
 Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly
 2145 2150 2155 2160
 Leu Lys Asn Thr Pro Ser Glu Gly Gln Pro Asn Thr Gly Leu Lys Asn
 2165 2170 2175
 Thr Pro Asn Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser
 2180 2185 2190
 Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Ala Ala Asn Lys Gly Gln
 2195 2200 2205
 Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr
 2210 2215 2220
 Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys
 2225 2230 2235 2240
 Asn Ala Ala Asn Lys Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro
 2245 2250 2255
 Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly
 2260 2265 2270
 Gln Gln Asn Thr Gly Leu Lys Asn Ala Ala Asn Lys Gly Gln Gln Asn
 2275 2280 2285
 Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Pro Asn Thr Gly Leu
 2290 2295 2300
 Lys Asn Thr Pro Asn Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr

2305 2310 2315 2320
 Pro Ser Glu Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu
 2325 2330 2335
 Gly Gln Gln Asn Thr Gly Leu Lys Asn Thr Pro Ser Glu Gly Gln Gln
 2340 2345 2350
 Asn Thr Gly Leu Lys Asn Thr Pro Asn Glu Gly Gln Gln Asn Asn Asp
 2355 2360 2365
 Leu Lys Asn Lys Ala Ser Lys Gly Gln Gln Asn Asn Asp Leu Glu Asn
 2370 2375 2380
 Asp Gly Leu Lys His Lys Pro Asn Gln Gly Gln Lys His Thr Glu Leu
 2385 2390 2395 2400
 Asn Asn Lys Asn Leu Lys Asn Lys Pro Thr Asp Gly Leu Lys Asn Val
 2405 2410 2415
 Lys Asp Asp Glu Leu Ser Asp Asn Glu Ser Ser Asp Asn Glu Lys Ser
 2420 2425 2430
 Lys Lys Asn Leu Arg Gly Lys Lys Asn
 2435 2440

<210> 19
 <211> 654
 <212> PRT
 <213> Plasmodium falciparum

<400> 19
 Met Lys Ser Phe Lys Asn Lys Asn Thr Leu Arg Arg Lys Lys Ala Phe
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 Pro Val Phe Thr Lys Ile Leu Leu Val Ser Phe Leu Val Trp Val Leu
 20 25 30
 Lys Cys Ser Asn Asn Cys Asn Asn Gly Asn Gly Ser Gly Asp Ser Phe
 35 40 45
 Asp Phe Arg Asn Lys Arg Thr Leu Ala Gln Lys Gln His Glu His His
 50 55 60
 His His His His His Gln His Gln His Gln His Gln Ala Pro His Gln
 65 70 75 80
 Ala His His His His His His Gly Glu Val Asn His Gln Ala Pro Gln
 85 90 95
 Val His Gln Gln Val His Gly Gln Asp Gln Ala His His His His His
 100 105 110
 His His His His Gln Leu Gln Pro Gln Gln Pro Gln Gly Thr Val Ala
 115 120 125
 Asn Pro Pro Ser Asn Glu Pro Val Val Lys Thr Gln Val Phe Arg Glu
 130 135 140
 Ala Arg Pro Gly Gly Gly Phe Lys Ala Tyr Glu Glu Lys Tyr Glu Ser
 145 150 155 160
 Lys His Tyr Lys Leu Lys Glu Asn Val Val Asp Gly Lys Lys Asp Cys
 165 170 175
 Asp Glu Lys Tyr Glu Ala Ala Asn Tyr Ala Phe Ser Glu Glu Cys Pro
 180 185 190
 Tyr Thr Val Asn Asp Tyr Ser Gln Glu Asn Gly Pro Asn Ile Phe Ala

195					200					205					
Leu	Arg	Lys	Arg	Phe	Pro	Leu	Gly	Met	Asn	Asp	Glu	Asp	Glu	Glu	Gly
210						215					220				
Lys	Glu	Ala	Leu	Ala	Ile	Lys	Asp	Lys	Leu	Pro	Gly	Gly	Leu	Asp	Glu
225					230					235					240
Tyr	Gln	Asn	Gln	Leu	Tyr	Gly	Ile	Cys	Asn	Glu	Thr	Cys	Thr	Thr	Cys
				245					250					255	
Gly	Pro	Ala	Ala	Ile	Asp	Tyr	Val	Pro	Ala	Asp	Ala	Pro	Asn	Gly	Tyr
			260					265					270		
Ala	Tyr	Gly	Gly	Ser	Ala	His	Asp	Gly	Ser	His	Gly	Asn	Leu	Arg	Gly
		275					280					285			
His	Asp	Asn	Lys	Gly	Ser	Glu	Gly	Tyr	Gly	Tyr	Glu	Ala	Pro	Tyr	Asn
	290					295					300				
Pro	Gly	Phe	Asn	Gly	Ala	Pro	Gly	Ser	Asn	Gly	Met	Gln	Asn	Tyr	Val
305					310					315					320
Pro	Pro	His	Gly	Ala	Gly	Tyr	Ser	Ala	Pro	Tyr	Gly	Val	Pro	His	Gly
				325					330					335	
Ala	Ala	His	Gly	Ser	Arg	Tyr	Ser	Ser	Phe	Ser	Ser	Val	Asn	Lys	Tyr
			340					345					350		
Gly	Lys	His	Gly	Asp	Glu	Lys	His	His	Ser	Ser	Lys	Lys	His	Glu	Gly
		355					360					365			
Asn	Asp	Gly	Glu	Gly	Glu	Lys	Lys	Lys	Lys	Ser	Lys	Lys	His	Lys	Asp
	370					375					380				
His	Asp	Gly	Glu	Lys	Lys	Lys	Ser	Lys	Lys	His	Lys	Asp	Asn	Glu	Asp
385					390					395					400
Ala	Glu	Ser	Val	Lys	Ser	Lys	Lys	His	Lys	Ser	His	Asp	Cys	Glu	Lys
				405					410					415	
Lys	Lys	Ser	Lys	Lys	His	Lys	Asp	Asn	Glu	Asp	Ala	Glu	Ser	Val	Lys
			420					425					430		
Ser	Lys	Lys	Ser	Val	Lys	Glu	Lys	Gly	Glu	Lys	His	Asn	Gly	Lys	Lys
		435					440					445			
Pro	Cys	Ser	Lys	Lys	Thr	Asn	Glu	Glu	Asn	Lys	Asn	Lys	Glu	Lys	Thr
	450					455					460				
Asn	Asn	Ser	Lys	Ser	Asp	Gly	Ser	Lys	Ala	His	Glu	Lys	Lys	Glu	Asn
465					470					475					480
Glu	Thr	Lys	Asn	Thr	Ala	Gly	Glu	Asn	Lys	Lys	Val	Asp	Ser	Thr	Ser
				485					490					495	
Ala	Asp	Asn	Lys	Ser	Thr	Asn	Ala	Ala	Thr	Pro	Gly	Ala	Lys	Asp	Lys
			500					505					510		
Thr	Gln	Gly	Gly	Lys	Thr	Asp	Lys	Thr	Gly	Ala	Ser	Thr	Asn	Ala	Ala
		515					520					525			
Thr	Asn	Lys	Gly	Gln	Cys	Ala	Ala	Glu	Gly	Ala	Thr	Lys	Gly	Ala	Thr
	530					535					540				
Lys	Glu	Ala	Ser	Thr	Ser	Lys	Glu	Ala	Thr	Lys	Glu	Ala	Ser	Thr	Ser
545					550					555					560
Lys	Glu	Ala	Thr	Lys	Glu	Ala	Ser	Thr	Ser	Lys	Glu	Ala	Thr	Lys	Glu
				565					570					575	

Ala Ser Thr Ser Lys Gly Ala Thr Lys Glu Ala Ser Thr Thr Glu Gly
580 585 590

Ala Thr Lys Gly Ala Ser Thr Thr Ala Gly Ser Thr Thr Gly Ala Thr
595 600 605

Thr Gly Ala Asn Ala Val Gln Ser Lys Asp Glu Thr Ala Asp Lys Asn
610 615 620

Ala Ala Asn Asn Gly Glu Gln Val Met Ser Arg Gly Gln Ala Gln Leu
625 630 635 640

Gln Glu Ala Gly Lys Lys Lys Lys Lys Arg Gly Cys Cys Gly
645 650

<210> 20
<211> 212
<212> PRT
<213> Plasmodium falciparum

<400> 20
Met Lys Gly Ser Gly Ser Glu Lys Asn Val Tyr Leu Ser Asn Lys Asn
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Lys Glu Ile Asn Met Asn Gln Gln Ser Asp Asn Lys Met Cys Asp Glu
20 25 30

Cys Asp Asp Met Asn Gln Pro Gly Asp Val Asn Lys Asn Asp Lys Thr
35 40 45

Ser Asn Asp Gln Ala Asn Ser Ser Asp Ser Asp Cys Glu Pro Leu Pro
50 55 60

Phe Gly Leu Lys Pro Ser Asp Leu Asn Arg Lys Val Thr Glu Glu Asp
65 70 75 80

Leu Glu Arg Met Ile Ile Glu Leu Pro Gly Lys Leu Glu Arg Lys Asp
85 90 95

Met Tyr Leu Ile Trp His Tyr Ser His Ser Leu Leu Arg Asp Lys Phe
100 105 110

Asn Lys Met Lys Ser Ser Leu Trp Ser Ile Cys Gly Lys Leu Ala His
115 120 125

Glu His Lys Leu Pro Phe Lys Ile Lys Met Lys Lys Trp Trp Lys Cys
130 135 140

Cys Gly His Val Thr Asp Glu Leu Leu Ile Lys Glu His Asp Asp Tyr
145 150 155 160

Asn Ser Ile Tyr Asn Tyr Ile Asn Asn Glu Ser Ser Ser Arg Glu Gln
165 170 175

Phe Leu Ile Phe Leu Asn Met Ile Lys His Ser Trp Thr Thr Phe Thr
180 185 190

Met Glu Thr Phe Ile Lys Cys Lys Ile Ser Leu Glu Asn Asn Met Arg
195 200 205

Asn Val Thr Asn
210

<210> 21
<211> 255
<212> PRT
<213> Plasmodium falciparum

<400> 21

Met Asn Ile Leu Val Thr Leu Phe Ile His Thr Asn Lys Ile Tyr Thr
 1 5 10 15

Ile Ile Ile Ile Thr Tyr Ile Val Leu Cys Tyr Leu Phe Leu Cys Ser
 20 25 30

Phe Tyr Val Lys Lys Ser Ile Lys Asn Ile Thr Arg Glu Lys Lys Tyr
 35 40 45

Met Tyr Gln Arg Ile Ile Val Glu Arg Glu Asp Val Ile Trp Lys Gln
 50 55 60

Asp Phe Lys Ile Thr Leu Asn Glu Lys Ser Tyr Glu Arg Leu Asn Leu
 65 70 75 80

Pro Thr Glu Lys Gln Ile Pro Tyr Ser Thr Cys Ser Glu Glu Ile Glu
 85 90 95

Lys Val His Asn Leu Thr Thr Arg Val Thr Glu Ile Trp Lys Leu Leu
 100 105 110

Leu Glu Gln Met Glu Val Lys Tyr Leu Ile Lys Thr Asp Asn Met Asn
 115 120 125

His Lys Trp Arg Asp Phe Met Trp Glu Ser Lys Trp Ala Leu Tyr Leu
 130 135 140

Glu Asn Val Tyr Lys Phe Ile Asn Asp Lys Leu Asn Glu Pro His Val
 145 150 155 160

Ser Ile Val Glu Lys Glu Thr Phe Ile Gln Lys Trp Phe Ile Asn Thr
 165 170 175

Ser His Asp Tyr Asn Tyr Phe Leu Asn Phe Val Phe Glu Arg Trp Lys
 180 185 190

His Lys Val Lys Ser Val Cys Glu Gln Tyr Glu Val Leu Leu Tyr His
 195 200 205

Ile Cys Ser Phe Leu Phe Phe Leu Ile Ser Leu Phe Ser Cys Ile Phe
 210 215 220

Ile Tyr Leu Phe Leu Pro Phe Leu Cys Met Phe Val Tyr Leu Leu Pro
 225 230 235 240

Phe Cys Leu Phe Leu Ile Ile Asn Phe Ile Asn Lys Pro Phe Met
 245 250 255

<210> 22

<211> 1192

<212> PRT

<213> Plasmodium falciparum

<400> 22

Met Leu Lys Lys Tyr Ile Ile Leu Ile Tyr Ile Gly Val Ile Leu Asn
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Phe Ile Thr Lys Asn Asn Asn Val Val Ser Val Pro Glu Pro Phe Leu
 20 25 30

Ser Gln Asn Lys Asp Ser Phe Glu Glu Lys Lys Tyr Thr Tyr Gly Asp
 35 40 45

Asn Leu Gln Leu Gly Ala Ser Thr Ile Asn Thr Pro Lys Thr Gln Ser
 50 55 60

Gln Glu Asn Lys Asp Ile Asn Lys Glu Thr Lys Asn Thr Ile Ile Lys

65						70						75						80
Lys	Thr	Asn	Asn	Phe	Pro	Ser	Thr	Leu	Asn	Glu	Lys	Phe	Pro	His	Lys			
				85					90					95				
Ile	Gln	Leu	Thr	Asn	Lys	Glu	Asn	Lys	Glu	Asp	Glu	Gln	Asn	Lys	Glu			
			100					105					110					
Asn	Lys	Lys	Asp	Glu	Gln	Asn	Lys	Glu	Asp	Glu	Gln	Asn	Lys	Gln	Asn			
		115					120					125						
Lys	Glu	Asp	Glu	Gln	Asn	Lys	Gln	Asn	Lys	Asp	Lys	Lys	Asn	Ile	Val			
	130					135					140							
Ser	Asn	Lys	Leu	Ser	Gly	Asn	Asn	Glu	Gln	Gln	Asn	Asn	Ser	Ile	Pro			
145					150					155					160			
Lys	Ser	Ile	Gln	Lys	Pro	Glu	Asn	Cys	Val	Lys	Lys	Gln	Ser	Asn	Gln			
				165					170					175				
Phe	Pro	Arg	Ser	Tyr	Pro	Glu	Phe	Phe	Glu	Ala	Asn	Phe	Gly	Pro	Ile			
			180					185					190					
Asp	Glu	Leu	Met	Asp	Glu	Thr	Asp	Tyr	Ser	Ser	Asp	Asp	Leu	Glu	Asp			
		195					200					205						
Gln	Leu	Asn	Tyr	Gly	Tyr	Arg	Gly	Ile	Glu	His	Asp	Ile	Asp	Glu	Thr			
	210					215					220							
Asp	Tyr	Tyr	Ile	Gly	Ser	Ile	Leu	Gly	Tyr	Ser	Asp	Phe	Met	Asn	Lys			
225					230					235					240			
Met	Lys	Tyr	Gln	Asn	Thr	Gln	Ile	Asp	Asn	Asn	Lys	Gly	Lys	Lys	Thr			
				245					250					255				
Thr	Asn	Thr	Met	Glu	Lys	Asn	Lys	Lys	Asn	Arg	Asp	Lys	Lys	His	Ser			
			260					265					270					
Lys	Lys	Arg	Lys	Thr	Lys	Gln	Asn	Tyr	Lys	Tyr	Lys	Lys	Glu	Asn	Gln			
		275					280					285						
Asn	Ile	Glu	Asn	His	Ile	Pro	Gln	Ser	Lys	Tyr	Lys	Gln	Glu	Arg	Ile			
	290					295					300							
Glu	Ile	Leu	Asp	Asp	Asn	Gly	Lys	Glu	Leu	Lys	Ser	His	Lys	Asn	Ile			
305					310					315					320			
Lys	Glu	Glu	Lys	Gly	Gly	Ile	Glu	Lys	Thr	Asp	Thr	Thr	Asn	Ile	Ala			
				325					330					335				
Asp	Ile	Lys	Ile	Lys	Lys	Glu	Glu	Arg	Glu	Thr	Lys	Asp	Glu	Lys	Glu			
			340					345					350					
Lys	Asn	Ile	Gln	Gln	Leu	Val	Lys	Asp	Val	Gln	Leu	Ile	Lys	Val	Gly			
		355				360						365						
Glu	Glu	Thr	Lys	Asp	Asp	Glu	Lys	Glu	Asp	Lys	Glu	Gly	Thr	Asp	Asp			
	370					375					380							
Glu	Glu	Asp	Thr	Asp	Asp	Glu	Glu	Asp	Thr	Asp	Asp	Glu	Glu	Asp	Thr			
385					390					395					400			
Asp	Asp	Glu	Glu	Asp	Thr	Ser	Asp	Glu	Glu	Thr	Thr	Gly	Asp	Gln	Glu			
				405					410					415				
Asn	Lys	Glu	Glu	Thr	Glu	Val	Asp	Glu	Lys	Lys	Thr	Glu	Lys	Ala	Glu			
			420					425					430					
Glu	Glu	Leu	Glu	Glu	Asp	Lys	Glu	Glu	Ser	Glu	Lys	Asp	Lys	Glu	Glu			
		435					440					445						

Ser Glu Lys Asp Lys Glu Glu Ser Glu Lys Asp Lys Glu Glu Ser Glu
 450 455 460
 Lys Asp Lys Glu Lys Thr Glu Glu Asp Glu Glu Lys Thr Glu Asp Glu
 465 470 475 480
 Lys Gly Thr Glu Val Tyr Lys Lys Glu Thr Asp Val Asp Glu Lys Lys
 485 490 495
 Glu Lys Gly Glu Tyr Gly Glu Gly Thr Asp Asp Glu Glu Asp Lys Glu
 500 505 510
 Lys Glu Glu Asp Asp Glu Glu Thr Lys Val Glu Glu Lys Lys Thr Glu
 515 520 525
 Lys Asp Glu Glu Gly Thr Asp Tyr Glu Glu Asp Thr Asp Asp Ser Asp
 530 535 540
 Lys Asp Glu Glu Thr Lys Val Glu Glu Lys Lys Thr Glu Arg Asp Glu
 545 550 555 560
 Glu Glu Thr Glu Glu Asp Glu Lys Glu Thr Glu Val Glu Lys Lys Lys
 565 570 575
 Thr Glu Lys Asp Glu Glu Gly Thr Asp Tyr Glu Glu Asp Thr Asp Asp
 580 585 590
 Ser Asp Lys Asp Val Glu Thr Glu Val Glu Glu Thr Asp Ala Glu Asp
 595 600 605
 Lys Glu Glu Asn Glu Glu Gly Thr Asp Asp Glu Glu Asp Lys Val Glu
 610 615 620
 Glu Thr Asp Leu Asp Asp Gln Glu Glu Asp Gly Glu Glu Asp Lys Glu
 625 630 635 640
 Asp Asp Lys Glu Lys Asp Lys Glu Asp Asp Lys Glu Asp Asp Lys Glu
 645 650 655
 Lys Asp Lys Glu Asp Asp Lys Glu Lys Tyr Lys Glu Asp Asp Lys Glu
 660 665 670
 Asp Asp Lys Glu Asp Asp Lys Glu Lys Asp Lys Glu Asp Asn Lys Glu
 675 680 685
 Lys Asp Lys Glu Asp Asn Lys Glu Lys Asp Lys Glu Asp Asp Lys Glu
 690 695 700
 Lys Asp Lys Glu Asp Asp Lys Glu Lys Asp Lys Glu Asp Asn Lys Glu
 705 710 715 720
 Lys Asp Lys Glu Asp Asn Lys Glu Lys Asp Lys Glu Asp Asp Lys Glu
 725 730 735
 Lys His Asp Lys His Val Arg Arg Ile Lys Lys Lys Met Lys Asp Asp
 740 745 750
 Asp Tyr Asp Glu Ser Leu Lys Thr Lys Asn Tyr Tyr Pro His Asn Met
 755 760 765
 Thr Phe Gly Gln Gln Gln Tyr Phe Pro Tyr Tyr Asn Pro Leu Glu Gln
 770 775 780
 Gln Asn Tyr Gln Leu His His Ile Ile Lys Gln Gln Gln Asn Tyr His
 785 790 795 800
 Pro His His Ile Ile Lys Gln Gln Gln Asn His Asn Pro His His Ile
 805 810 815

Leu Gln Glu Gln Glu Lys His His Pro Gln Gly Ile Pro Lys Glu Gln
 820 825 830
 Pro Tyr Asn Asn Val Pro Tyr Ile Leu Lys Lys Gly Leu Glu Pro Lys
 835 840 845
 Thr His Asn His Val Lys Glu Asp Gln Pro Asn Ile Lys Gln Gly Val
 850 855 860
 Val Lys Gly Gln Glu Pro His Val Asp Asp Met His Asn Asn Thr Lys
 865 870 875 880
 Glu His Lys Asn Phe Lys Asn Thr Thr Asp Val Lys Gln Pro Ala Ser
 885 890 895
 His Ile Tyr Asn Asn Ser Ser Glu Lys Gln Ile Glu His Val Tyr Asn
 900 905 910
 Lys Ser Pro Glu Lys Gln Ile Glu His Val Tyr Asn Lys Ser Pro Glu
 915 920 925
 Lys Gln Ile Glu His Val Tyr Asn Asn Ser Pro Glu Lys Gln Ile Glu
 930 935 940
 His Val Tyr Asn Asn Ser Pro Glu Lys Gln Ile Glu His Val Tyr Asn
 945 950 955 960
 Asn Ser Pro Glu Lys Gln Ile Glu His Val Tyr Asn Asn Ser Pro Glu
 965 970 975
 Lys Pro Ala Arg His Thr Asn Asn Ile Ser Leu Glu Lys Gln Asn Ser
 980 985 990
 His Lys Tyr Asn Val Asn Ile Gln Asp Arg His Asp Pro Val Tyr Tyr
 995 1000 1005
 Lys Tyr Glu Asp Met Leu Lys Arg Asp Lys Asp Leu Phe Thr Ile Ile
 1010 1015 1020
 Asn Asn Ile Cys Glu Leu Glu Phe Asn Ser Thr Asn Asn Tyr Leu Met
 1025 1030 1035 1040
 Lys Ile Ile Asn Asn Asp Lys Leu Lys His Asn Ser Leu Asn Asp Asn
 1045 1050 1055
 Glu Ala Ile Leu Lys Glu Ile Thr Lys Thr Gln Asn Glu Leu Phe Ser
 1060 1065 1070
 Leu Lys Leu Pro Leu Glu Ile Lys Val Ser Met Ala Leu Arg Ile Ser
 1075 1080 1085
 Glu Arg Leu Arg Ala Phe Val Phe Asp Lys Asp Leu Thr Ala Tyr Tyr
 1090 1095 1100
 Ile Lys Lys Leu Lys Asp Ile Phe Lys Leu Glu Thr Glu Ala Ala Lys
 1105 1110 1115 1120
 Asn Tyr Tyr Tyr Tyr Val Lys Cys Gln Lys Thr Phe Ser Asp Lys Lys
 1125 1130 1135
 Arg Leu Val Asn Asn Leu Asp Ser Ile Lys Leu Tyr Tyr Glu Ser Gln
 1140 1145 1150
 Ile Asn Lys Asn Phe Ile Ser Ile Pro Lys Asp Lys Ile Pro Thr Ala
 1155 1160 1165
 Ile Tyr Arg Ile Ser Asn Leu Val Asn Asp Leu Ile Phe Leu Leu Pro
 1170 1175 1180
 Gln Ser Asn Ala Asn Lys Ala Leu

1185

1190

<210> 23
 <211> 106
 <212> PRT
 <213> Plasmodium falciparum

<400> 23
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 Asn Phe Ile Ala Pro Arg Asp Tyr Asn Ser Met Val Glu Ala Lys Pro
 20 25 30
 Ala Lys Lys Leu Thr Pro Ala Glu Arg Lys Lys Arg Asn Gln Asn Ile
 35 40 45
 Met Ile Tyr Ser Ser Ile Ala Ser Ala Val Ala Leu Leu Ile Gly Gly
 50 55 60
 Ala Val Gly Leu Gly Ile His Leu His Lys Asn Asn Lys Gly Asp Asn
 65 70 75 80
 Lys Lys Gly Thr Pro Gly Ala Lys Lys Asn Asp Asn Lys Ala Val Asn
 85 90 95
 Pro Ser Ile Ser Ser Thr Met Tyr Arg Ala
 100 105

<210> 24
 <211> 1308
 <212> PRT
 <213> Plasmodium falciparum

<400> 24
 Met Phe Ile Phe Phe Leu Phe Phe Phe Tyr Asn Asp Val Met Thr Arg
 1 5 10 15
 Asn Met Phe Phe Leu Tyr Asn Lys Leu Thr Gly Ser Ser Arg Lys Phe
 20 25 30
 Asp Asp Ile Leu Lys Glu Lys Asn Ala Asp Val Glu Lys Lys Asp Val
 35 40 45
 Thr Leu Asn Leu Asp Glu Lys Lys Asn Val Glu Glu Tyr Lys Lys Asn
 50 55 60
 Lys Asp Val Phe Lys Asn Glu Glu Asp Asn Phe Phe Phe Val Phe Asp
 65 70 75 80
 Asp Lys Glu Ile Asn Lys Leu Asn Lys Ile Lys Glu Glu Gln Cys Asn
 85 90 95
 Met Lys Glu Asn Glu Phe Ile Asn Glu Lys Gly Tyr Ile Leu Asn Asp
 100 105 110
 Glu Asn Val Ser Thr Ile Asn Asn Ile Thr Ser Leu Asn Asn Asp Ile
 115 120 125
 Leu His Ser Ser Asp Lys Asn Val Cys Thr Ser Tyr Asn Ile Tyr Pro
 130 135 140
 Ser Asn Gly Asn Asn Asn Asn Asn Asn Asn Asn Asn Val Ile His
 145 150 155 160
 Ser Asn Asn Ser Asn Ile Phe Val Asn Asp Ser His Met Glu His Phe
 165 170 175

Asp Asp Ile Thr Asp Glu Phe Phe Lys Ile Asp Gln Thr Asn Phe Ser
 180 185 190
 Phe Phe Gln Phe Asn Thr Ser Phe Glu Asn Lys Lys Asn Val Asn Glu
 195 200 205
 Glu Glu Leu Met Lys His Thr Asp Asn Ile Asn Ile Cys Asp Lys Ile
 210 215 220
 Ile Asp Lys Lys Lys Asn Cys Asn Thr Leu Ser Asp Leu Ile His Asp
 225 230 235 240
 Asp Asn Leu Phe Asn Asp Asn Leu Asn Ile Tyr Glu Asp Asn Asn Asn
 245 250 255
 Lys Asp Asp Val Ile Ser Thr Asp Leu Phe Met Leu Lys Asn Asn Tyr
 260 265 270
 Asn Lys Asn Phe Glu Lys Asn Glu Ile Asp Val Val Val Asp Thr Ser
 275 280 285
 Thr Thr Phe Glu Asn Ile Asn Asn Asp Asn Asn Glu Lys Asn Leu Tyr
 290 295 300
 Asn Leu Asn Asn Gln Met Ser Asp Lys Glu Leu Leu Asn Asn Asn Lys
 305 310 315 320
 Asp Asp Thr Phe Tyr Ile Asn Asn Lys Phe Leu Ile Ser Glu Asn Asn
 325 330 335
 Ile Leu Leu Glu Asp Lys Asp Ile Ser Phe Ile Asp Arg Lys Ile Glu
 340 345 350
 Ser Asn Lys Cys Glu Asp Tyr Cys Val Asn Asn Asn Asn Asn Asn Asn
 355 360 365
 Glu Arg Asn Asn Leu Ser Asp Ile Leu Glu Asn Ala Tyr Ser Lys Asp
 370 375 380
 Cys Glu Ser Arg Thr Ile Asn Glu Asp Arg Ile Tyr Asn Asn Phe Glu
 385 390 395 400
 Asp Met Asp Lys Ile Ser His Asp Ala Phe Asp Phe Ile Ile Pro Ser
 405 410 415
 Ser Phe Asn Lys Glu Glu Asp Asn Gly Asn Glu Lys Tyr Gln Asn Val
 420 425 430
 Phe Asp Ser Asn Lys Asp Asn Leu Glu Asn Ile Asn Val Glu Asp Pro
 435 440 445
 Pro Phe Ser Asn Phe Ser Glu Glu Lys Gln Asn Phe Phe Gln Asn Cys
 450 455 460
 Asp Met Ser Glu Asn Ile Trp Leu Asn Lys Lys Phe Asp Glu His Asn
 465 470 475 480
 Val Phe Glu Lys Asn Glu Ile Tyr Glu Pro Lys Asn Val Tyr Glu Asn
 485 490 495
 Glu Asn Tyr Asp Gln Lys Asp Val Asp Glu Ser Ser Lys Phe Phe Glu
 500 505 510
 Asn Asn Val Phe Phe Trp Asp Asp Lys Asn Lys Asn Val Asp Glu Ile
 515 520 525
 Ile Asp Ser Gly Val Glu Gly Asn Cys Asp Val Glu Glu Lys Leu Asp
 530 535 540
 Lys Glu Glu Glu Lys Thr Tyr Phe Val Glu Thr Gly Ile Asn Tyr Gly

38

Ile His Ser Gly Asp Asn Ile Tyr Ser Gly Asp Asn Ile Asp Asp Asp
 930 935 940
 Asn Ile Tyr Asp Gly Asp Asn Ile Asn Ser Gly Asp Asn Val Glu Asn
 945 950 955 960
 Leu Leu Lys Glu His Lys Ile Ala Val Asn Glu Ser Glu Glu Ile Ala
 965 970 975
 Gln Asp Ile Lys Glu Lys Tyr Glu Lys Arg Asp Asn Glu Phe Thr Asp
 980 985 990
 Tyr Val Glu Glu Asn Ser Asp Ile Arg Phe Tyr Asp Lys Gly Lys Gly
 995 1000 1005
 Glu Met Val Asn Glu Leu Ile Gly Glu Tyr Ser Glu Lys Tyr Met Asp
 1010 1015 1020
 Asn Asn Ile Glu Asp Asn Glu Leu Val Ile Trp Ser Ala Ser Val Lys
 1025 1030 1035 1040
 Asn Asp Lys Glu Arg Leu Asn Asp Asp Asn Ile Asp Leu Asn Asn Asn
 1045 1050 1055
 Ile Ser Asn Asp Tyr Ile Lys Asn Asn Asn Glu Asp Ile Lys Asn Val
 1060 1065 1070
 His Asp Ser Phe Ser Ile Ser Asn Lys Ser Glu Leu His Asp Ile Asn
 1075 1080 1085
 Gly Ile Leu Glu Lys Ser Ile Ser Ser Asn Asp Ile Lys Ser Ile Glu
 1090 1095 1100
 Val Cys Val Lys Lys Glu Asn Glu Ile His His Lys Asn Met Met Lys
 1105 1110 1115 1120
 Lys Lys Lys Glu Leu Asn Asn Asp Asn Asn Leu Asn Asp Glu Met Tyr
 1125 1130 1135
 Met Cys Asp Ile Ser Asn Asp Ile Phe Lys Asn Asn Glu Tyr Thr Lys
 1140 1145 1150
 His Val Asp Asp Val Tyr Thr Phe Asp Glu Asn Asn Ser Asn Asn Leu
 1155 1160 1165
 Ile Ile Gly Glu Asp Glu His Cys Val Ser Ser Met Asn Phe Glu Tyr
 1170 1175 1180
 Pro Phe Asn Ile Ser Lys Met Asn Thr Glu Ser Asn Asn Ile Leu Tyr
 1185 1190 1195 1200
 Glu Gln Asn Asp Lys Lys Lys Thr Asn Ile Asn Ser Val Lys His Pro
 1205 1210 1215
 Met Thr Tyr Ile Lys Gly Phe Glu Tyr Ala Ser Asp Ser Ile Asn Phe
 1220 1225 1230
 Leu Lys Ala Leu Lys Gly Leu Pro Pro Leu Pro Phe Leu Lys Cys Lys
 1235 1240 1245
 Asp Met Lys Pro Tyr Met Arg Leu Phe Asn Ile Val Leu Lys Val Ile
 1250 1255 1260
 Glu Ser Asn Asp Tyr Asn Gly Lys Arg Lys Ile Lys Val Thr Lys Met
 1265 1270 1275 1280
 Phe Ile Cys Leu Lys Leu Lys Phe Phe Asp Met Ile Tyr Val Phe Ile
 1285 1290 1295

Ile Tyr Phe Ile Leu Tyr Ile Phe Leu Phe Phe Lys
 1300 1305

<210> 25
 <211> 538
 <212> PRT
 <213> Plasmodium falciparum

<400> 25
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 Cys Lys Ala Lys Tyr Leu Asn Pro Leu Leu Ile Asn Lys Asn Glu Asp
 20 25 30
 Ile Ile Lys Glu Thr Ser Ile Leu Lys Asn Asn Asn Leu Tyr Ser Arg
 35 40 45
 Lys Glu Ser Asn Val Phe Ile Glu Ile Leu Lys Ser Ser Phe Ile Lys
 50 55 60
 Phe Arg Gly Gln Lys Ile Asn Glu Glu Ile Asn Asn His Asn Asn Ile
 65 70 75 80
 Ile Asn Asn Ser Ser His Asn Asn Asn His Asn Ile Tyr His Asp Thr
 85 90 95
 Asn Lys Lys Lys Lys Gln Gln Tyr Glu Glu Lys His Asn Val Phe His
 100 105 110
 Thr Glu Asn Met His Lys Glu Val Leu Leu Cys Met Asp Val Leu Gln
 115 120 125
 Tyr Glu Glu Asp Lys Val Asn Arg Glu Leu His Leu Leu His Ser Tyr
 130 135 140
 Phe Asn Lys Glu Arg Thr Asn Ile Asp Pro Tyr Thr Leu Cys Glu Ser
 145 150 155 160
 Lys Ile Lys Asn Ile Asp Glu Tyr Ile Tyr Asn Ile Ile Lys Thr Asn
 165 170 175
 Tyr Lys Asn Ile Asp Glu Phe Ile Thr Tyr Ile Tyr Leu Tyr Lys Gly
 180 185 190
 Lys Arg Phe Arg Val Ile Leu Ser Ile Leu Leu Lys Asn Ile Leu His
 195 200 205
 His Ile Asp Asn Val Ser Lys Ile Lys Thr Asn Phe Lys Asn Arg Asn
 210 215 220
 Ile Gln Arg Lys Phe Phe Lys Ser Asn Lys Leu Thr Ser Asn Tyr Leu
 225 230 235 240
 Ser Asn Lys Leu Lys Leu Tyr Asn Leu Lys Ile Thr Gln Lys Lys Asn
 245 250 255
 Ile Cys Glu Lys Thr Val Leu Asp Asn Gln Cys Lys Ile Ile Ala Ala
 260 265 270
 Ser Glu Ile Ile His Met Gly Ser Leu Leu His Asp Asp Val Ile Asp
 275 280 285
 Asp Ser Asn Lys Arg Arg Gly Val Ile Ala Leu His Lys Lys Phe Gly
 290 295 300
 Asn Lys Ile Ser Ile Leu Ser Gly Asp Tyr Leu Leu Ala Arg Ala Ser
 305 310 315 320

Ser Ile Phe Ala Gly Thr Gly Ser Pro Lys Ile Cys Arg Ser Phe Ser
 325 330 335
 Tyr Val Val Glu Ser Leu Ile Lys Gly Glu Phe Leu Gln Arg Asn Leu
 340 345 350
 Lys Phe Asn Asn Val Glu Glu Ala Leu Lys Met Tyr Leu Ile Lys Ser
 355 360 365
 Tyr His Lys Thr Ala Ser Leu Phe Ser His Leu Phe Ala Cys Ile Ala
 370 375 380
 Ile Leu Ser Phe Lys Asn Asp Thr Ile Ile Gln Leu Cys Phe Asn Leu
 385 390 395 400
 Gly Leu His Ile Gly Met Ala Phe Gln Leu Tyr Asp Asp Tyr Leu Asp
 405 410 415
 Tyr Lys Ile Asp Asp Asn Thr Asn Lys Pro Ile Leu Asn Asp Leu Lys
 420 425 430
 Asn Asn Ile Lys Thr Ala Pro Leu Leu Phe Ser Tyr Asn Tyr Asn Pro
 435 440 445
 Gln Val Ile Leu Gln Leu Ile Asn Lys Asn Ser Tyr Thr Asn Asn Asp
 450 455 460
 Ile Glu Asn Ile Leu Tyr Tyr Ile Gln His Ser Asn Ser Met Lys Lys
 465 470 475 480
 Asn Glu Leu Cys Ser Leu Leu His Ile Lys Lys Ala Ser Asp Ile Leu
 485 490 495
 Tyr Ser Leu Ile Ser His Cys Asn Lys Pro Ser Thr Asn Lys Asn Asn
 500 505 510
 Thr Lys His Asp Asp Ile Lys Gln Ser Ser Glu Ala Leu Ile Asn Leu
 515 520 525
 Ile Leu Asn Val Leu Ser Arg Asn Val Lys
 530 535

<210> 26

<211> 115

<212> PRT

<213> Plasmodium falciparum

<400> 26

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 20 25 30
 Ile Asn Phe Val Gly His Leu Val Glu Ile Cys Leu Ile His Val Asp
 35 40 45
 Phe Leu Lys Asn Glu Ala Tyr Val Leu Leu His Ser Arg Glu Glu Val
 50 55 60
 Leu His Phe Met Lys Leu Tyr Tyr Val Ile Cys Asn Asn Met His Phe
 65 70 75 80
 Ile Asp Lys Thr Lys Arg Asn Ile Glu Ile Glu Ile Tyr Asn Glu Glu
 85 90 95
 Glu Glu Asn Val Phe Trp Lys Glu Ser Lys Arg Asn Cys Thr Lys Phe
 100 105 110

Asn Ile Trp
115

<210> 27
<211> 78
<212> PRT
<213> Plasmodium falciparum

<400> 27
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Ser Lys His Cys Ser Tyr Cys Ser Ser Cys Ile Ser Arg Tyr Asp His
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His Cys Phe Leu Leu Asn Asn Cys Ile Gly Gly Tyr Asn Asn Met Tyr
35 40 45
Tyr Leu Val Phe Leu His Ile His Ile Ile Ile Thr Phe Tyr Ser Thr
50 55 60
Tyr Ile Ser Lys Tyr Thr His Thr Gln Lys Ile Lys Ile Lys
65 70 75

<210> 28
<211> 1979
<212> PRT
<213> Plasmodium falciparum

<400> 28
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Asp Lys Val Ser Lys Glu Ser Phe Asn Glu Glu Asp Asn Glu Asn Asn
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Glu Lys Arg Glu Lys Ser Asp Ser Trp Tyr Lys Lys Ile Ile Glu Thr
35 40 45
Lys Gly Lys Ser Lys Thr Lys Tyr Lys Asn Asp Asn Ser Leu Asp Asp
50 55 60
Asn Ile Asn Glu Asp Ile Ile Asn Asn Asn Asn Asn Asn Asn Asp
65 70 75 80
Asn Asn Asn Asp Asn Asn Asn Asp Asn Asn Asn Asp Asn Asn Asn Asp
85 90 95
Asn Asn Asn Asp Asn Asn Asn Glu Asn Asn Asn Asp Asn Asn Asn Phe
100 105 110
Asn Asn Tyr Ser Asp Glu Ile Ser Lys Asn Ile Ile His Lys Asp Asn
115 120 125
Glu Leu Glu Asn Gln Leu Lys Asp Thr Leu Lys Ser Ile Ser Ser Leu
130 135 140
Ser Asn Lys Ile Val Asn Tyr Glu Ser Lys Ile Glu Glu Leu Glu Lys
145 150 155 160
Glu Leu Lys Glu Val Lys Asp Lys Asn Ile Asp Asn Asn Asp Tyr Glu
165 170 175
Asn Lys Leu Lys Glu Lys Glu Asp Phe Val Lys Gln Lys Ile Asp Met
180 185 190
Leu Asn Glu Lys Glu Asn Leu Leu Gln Glu Lys Glu Leu Asp Ile Asn
195 200 205

Lys Arg Glu Lys Lys Ile Asn Glu Lys Glu Lys Asn Ile Ile Lys Lys
 210 215 220
 Glu Glu Thr Phe His Asn Ile Glu Lys Glu Tyr Leu Glu Lys Asn Lys
 225 230 235 240
 Glu Arg Glu Thr Ile Ser Ile Glu Ile Ile Asp Ile Lys Lys His Leu
 245 250 255
 Glu Lys Leu Lys Ile Glu Ile Lys Glu Lys Lys Glu Asp Leu Glu Asn
 260 265 270
 Leu Asn Lys Lys Leu Leu Ser Lys Glu Asn Val Leu Lys Glu Leu Lys
 275 280 285
 Gly Cys Val Lys Glu Lys Asn Glu Thr Ile Asn Ser Leu Asn Asp Asn
 290 295 300
 Ile Ile Glu Lys Glu Lys Lys Tyr Lys Leu Leu Glu Tyr Glu Leu Glu
 305 310 315 320
 Glu Lys Asn Lys Gln Ile Asp Leu Leu Asn Lys Gln Glu Lys Glu Lys
 325 330 335
 Glu Lys Glu Lys Glu Arg Glu Lys Glu Lys Glu Arg Glu Lys Glu Lys
 340 345 350
 Glu Lys Glu Tyr Asp Thr Leu Ile Lys Glu Leu Lys Asp Glu Lys Ile
 355 360 365
 Ser Ile Leu Glu Lys Val His Ser Ile Lys Val Arg Glu Met Asp Ile
 370 375 380
 Glu Lys Arg Glu His Asn Phe Leu His Met Glu Asp Gln Leu Lys Asp
 385 390 395 400
 Leu Lys Asn Ser Phe Val Lys Asn Asn Asn Gln Leu Lys Val Tyr Lys
 405 410 415
 Cys Glu Ile Lys Asn Leu Lys Thr Glu Leu Glu Lys Lys Glu Lys Glu
 420 425 430
 Leu Lys Asp Ile Glu Asn Val Ser Lys Glu Glu Ile Asn Lys Leu Ile
 435 440 445
 Asn Gln Leu Asn Glu Lys Glu Lys Gln Ile Leu Ala Phe Asn Lys Asn
 450 455 460
 His Lys Glu Glu Ile His Gly Leu Lys Glu Glu Leu Lys Glu Ser Val
 465 470 475 480
 Lys Ile Thr Lys Ile Glu Thr Gln Glu Leu Gln Glu Met Val Asp Ile
 485 490 495
 Lys Gln Lys Glu Leu Asp Gln Leu Gln Glu Lys Tyr Asn Ala Gln Ile
 500 505 510
 Glu Ser Ile Ser Ile Glu Leu Ser Lys Lys Glu Lys Glu Tyr Asn Gln
 515 520 525
 Tyr Lys Asn Thr Tyr Ile Glu Glu Ile Asn Asn Leu Asn Glu Lys Leu
 530 535 540
 Glu Glu Thr Asn Lys Glu Tyr Thr Asn Leu Gln Asn Asn Tyr Thr Asn
 545 550 555 560
 Glu Ile Asn Met Leu Asn Asn Asp Ile His Met Leu Asn Gly Asn Ile
 565 570 575

Lys Thr Met Asn Thr Gln Ile Ser Thr Leu Lys Asn Asp Val His Leu
 580 585 590
 Leu Asn Glu Gln Ile Asp Lys Leu Asn Asn Glu Lys Gly Thr Leu Asn
 595 600 605
 Ser Lys Ile Ser Glu Leu Asn Val Gln Ile Met Asp Leu Lys Glu Glu
 610 615 620
 Lys Asp Phe Leu Asn Asn Gln Ile Val Asp Leu Ser Asn Gln Ile Asp
 625 630 635 640
 Leu Leu Thr Arg Lys Met Glu Glu Lys Glu Asn Lys Met Leu Glu Gln
 645 650 655
 Glu Asn Lys Tyr Lys Gln Glu Met Glu Leu Leu Arg Gly Asn Ile Lys
 660 665 670
 Ser Ser Glu Asn Ile Leu Asn Asn Asp Glu Glu Val Cys Asp Leu Lys
 675 680 685
 Arg Lys Leu Ser Leu Lys Glu Ser Glu Met Lys Met Met Lys Glu Glu
 690 695 700
 His Asp Lys Lys Leu Ala Glu Leu Lys Asp Asp Cys Asp Val Arg Ile
 705 710 715 720
 Arg Glu Met Asn Glu Lys Asn Glu Asp Lys Ile Asn Met Leu Lys Glu
 725 730 735
 Glu Tyr Glu Asp Lys Ile Asn Thr Leu Lys Glu Gln Asn Glu Asp Lys
 740 745 750
 Ile Asn Thr Leu Lys Glu Gln Asn Glu Asp Lys Ile Asn Thr Leu Lys
 755 760 765
 Glu Glu Tyr Glu His Lys Ile Asn Thr Met Lys Glu Glu Tyr Glu His
 770 775 780
 Lys Ile Asn Thr Leu Asn Glu Gln Asn Glu His Lys Ile Asn Thr Leu
 785 790 795 800
 Asn Glu Gln Asn Glu His Lys Ile Asn Thr Met Lys Glu Glu Tyr Glu
 805 810 815
 Asp Lys Met Asn Thr Leu Asn Glu Gln Asn Glu Asp Lys Met Asn Ser
 820 825 830
 Leu Lys Glu Glu Tyr Glu Asn Lys Ile Asn Gln Ile Asn Ser Asn Asn
 835 840 845
 Glu Ile Lys Ile Lys Asp Val Val Asn Glu Tyr Ile Glu Glu Val Asp
 850 855 860
 Lys Leu Lys Val Thr Leu Asp Glu Lys Lys Lys Gln Phe Asp Lys Glu
 865 870 875 880
 Ile Asn Tyr Ala His Ile Lys Ala His Glu Lys Glu Gln Ile Leu Leu
 885 890 895
 Thr Glu Met Glu Glu Leu Lys Cys Gln Arg Asp Asn Lys Tyr Ser Asp
 900 905 910
 Leu Tyr Glu Lys Tyr Ile Lys Leu Ile Lys Ser Ile Cys Met Ile Ile
 915 920 925
 Asn Ile Glu Cys Cys Asp Asp Ile Glu Asn Glu Asp Ile Ile Arg Arg
 930 935 940
 Ile Glu Glu Tyr Ile Asn Asn Asn Lys Gly Leu Lys Lys Glu Val Glu

945	950	955	960
Glu Lys Glu His Lys Arg His Ser Ser Phe Asn Ile Leu Lys Ser Lys			
	965	970	975
Glu Lys Phe Phe Lys Asn Ser Ile Glu Asp Lys Ser His Glu Leu Lys			
	980	985	990
Lys Lys His Glu Lys Asp Leu Leu Ser Lys Asp Lys Glu Ile Glu Glu			
	995	1000	1005
Lys Asn Lys Lys Ile Lys Glu Leu Asn Asn Asp Ile Lys Lys Leu Gln			
	1010	1015	1020
Asp Glu Ile Leu Val Tyr Lys Lys Gln Ser Asn Ala Gln Gln Val Asp			
	1025	1030	1035
His Lys Lys Lys Ser Trp Ile Leu Leu Lys Asp Lys Ser Lys Glu Lys			
	1045	1050	1055
Ile Lys Asp Lys Glu Asn Gln Ile Asn Val Glu Lys Asn Glu Glu Lys			
	1060	1065	1070
Asp Leu Lys Lys Lys Asp Asp Glu Ile Arg Ile Leu Asn Glu Glu Leu			
	1075	1080	1085
Val Lys Tyr Lys Thr Ile Leu Tyr Asn Leu Lys Lys Asp Pro Leu Leu			
	1090	1095	1100
Gln Asn Gln Asp Leu Leu Ser Lys Ile Asp Ile Asn Ser Leu Thr Ile			
	1105	1110	1115
Asn Glu Gly Met Cys Val Asp Lys Ile Glu Glu His Ile Leu Asp Tyr			
	1125	1130	1135
Asp Glu Glu Ile Asn Lys Ser Arg Ser Asn Leu Phe Gln Leu Lys Asn			
	1140	1145	1150
Glu Ile Cys Ser Leu Thr Thr Glu Val Met Glu Leu Asn Asn Lys Lys			
	1155	1160	1165
Asn Glu Leu Ile Glu Glu Asn Asn Lys Leu Asn Leu Val Asp Gln Gly			
	1170	1175	1180
Lys Lys Lys Leu Lys Lys Asp Val Glu Lys Gln Lys Lys Glu Ile Glu			
	1185	1190	1195
Lys Leu Asn Lys Gln Leu Thr Lys Cys Asn Lys Gln Ile Asp Glu Leu			
	1205	1210	1215
Asn Glu Glu Val Glu Lys Leu Asn Asn Glu Asn Ile Glu Leu Ile Thr			
	1220	1225	1230
Tyr Ser Asn Asp Leu Asn Asn Lys Phe Asp Met Lys Glu Asn Asn Leu			
	1235	1240	1245
Met Met Lys Leu Asp Glu Asn Glu Asp Asn Ile Lys Lys Met Lys Ser			
	1250	1255	1260
Lys Ile Asp Asp Met Glu Lys Glu Ile Lys Tyr Arg Glu Asp Glu Lys			
	1265	1270	1275
Lys Arg Asn Leu Asn Glu Ile Asn Asn Leu Lys Lys Lys Asn Glu Asp			
	1285	1290	1295
Met Cys Ile Lys Tyr Asn Glu Met Asn Ile Lys Tyr Gly Asp Ile Cys			
	1300	1305	1310
Val Lys Tyr Glu Glu Met Ser Leu Thr Tyr Lys Glu Thr Ser Leu Lys			
	1315	1320	1325

Tyr Glu Gln Ile Lys Val Lys Tyr Asp Glu Lys Cys Ser Gln Tyr Asp
 1330 1335 1340
 Glu Ile Arg Phe Gln Tyr Asp Glu Lys Cys Phe Gln Tyr Asp Glu Ile
 1345 1350 1355 1360
 Asn Lys Lys Tyr Gly Ala Leu Leu Asn Ile Asn Ile Thr Asn Lys Met
 1365 1370 1375
 Val Asp Ser Lys Val Asp Arg Asn Asn Asn Glu Ile Ile Ser Val Asp
 1380 1385 1390
 Asn Lys Val Glu Gly Ile Ala Asn Tyr Leu Lys Gln Ile Phe Glu Leu
 1395 1400 1405
 Asn Glu Glu Ile Ile Arg Leu Lys Gly Glu Ile Asn Lys Ile Ser Leu
 1410 1415 1420
 Leu Tyr Ser Asn Glu Leu Asn Glu Lys Asn Ser Tyr Asp Ile Asn Met
 1425 1430 1435 1440
 Lys His Ile Gln Glu Gln Leu Leu Phe Leu Glu Lys Thr Asn Lys Glu
 1445 1450 1455
 Asn Glu Glu Lys Ile Ile Asn Leu Thr Ser Gln Tyr Ser Asp Ala Tyr
 1460 1465 1470
 Lys Lys Lys Ser Asp Glu Ser Lys Leu Cys Gly Ala Gln Phe Val Asp
 1475 1480 1485
 Asp Val Asn Ile Tyr Gly Asn Ile Ser Asn Asn Asn Ile Arg Thr Asn
 1490 1495 1500
 Glu Tyr Lys Tyr Glu Glu Met Phe Asp Thr Asn Ile Glu Glu Lys Asn
 1505 1510 1515 1520
 Gly Met His Leu Ser Lys Tyr Ile His Leu Leu Glu Glu Asn Lys Phe
 1525 1530 1535
 Arg Cys Met Lys Ile Ile Tyr Glu Asn Glu Asn Ile Lys Ser Ser Asn
 1540 1545 1550
 Lys Ile Ile Gly Leu Tyr Asn Tyr Ser Arg Tyr Tyr Gly Leu Arg Glu
 1555 1560 1565
 Asp Leu Cys Lys Glu Glu Ile Val Pro Ser Lys Ile Gly Asn Ile Ser
 1570 1575 1580
 Asn Lys Asn Glu Asn Asn Asn Lys Lys Asn Asn Thr Cys Asp Gly Tyr
 1585 1590 1595 1600
 Asp Glu Lys Val Thr Ile Val Leu Cys Ile Ile Leu Asn Glu Ile Ile
 1605 1610 1615
 Lys Phe Leu Phe Leu Asn Asp Glu Tyr Val Leu Leu Phe Glu Lys Ile
 1620 1625 1630
 His Lys Asn Val Trp Lys Arg Met Tyr Ile Pro Glu Glu Ile Lys Phe
 1635 1640 1645
 Phe Ile Leu Lys Tyr Ile Thr Leu Leu Asn Asn Leu Arg Asp Tyr Ile
 1650 1655 1660
 Ile Ser Val His Asn Asn Met Lys Asn Glu Lys Tyr Asp Glu Cys Trp
 1665 1670 1675 1680
 Phe Leu Phe Gln His Tyr Phe Glu Arg Ser Ser Asp Val Arg Lys Glu
 1685 1690 1695

Met Val His Phe Leu Leu Glu Arg Lys Ser Gln Glu Asn Leu Ile Ser
 1700 1705 1710

Phe Lys Ser Lys Leu Lys Ser Lys Lys Glu Lys Ile Leu Thr Met Asp
 1715 1720 1725

Ile Leu Asn Phe Ser Lys Glu His Met Gln Leu Lys Thr Ile Ala His
 1730 1735 1740

Leu Arg Lys Glu Ile Asn Tyr Glu Lys Leu Ser Lys Asp Thr Leu Asn
 1745 1750 1755 1760

Arg Asp Tyr Asn Leu Leu Leu Tyr Lys Tyr Gln Glu Cys Val Ser Lys
 1765 1770 1775

Leu Lys Arg Val Lys Asn Leu Met Lys Glu Ile Asn Gln Asn Val Phe
 1780 1785 1790

Ile Glu Lys Tyr Asp Asp Ile Ser Lys Glu Leu Asp Asn Phe Ser Asp
 1795 1800 1805

Gly Tyr Asn Glu Gln Asn Glu Gln His Val Met Asp Pro Ile Leu Leu
 1810 1815 1820

Asn Asn Asn Lys Asn Lys Asn Asn Lys Leu Ile Thr Glu His Asn Asn
 1825 1830 1835 1840

Pro Ile Ile Asn Arg Leu Thr Asn Phe Thr Gln Asn Arg Asp Ser Lys
 1845 1850 1855

Tyr Lys Asn Lys Ile Met Asp Asp Val Lys Gln Arg Lys Ile Asn Ser
 1860 1865 1870

Thr Met Asn Asn Thr Asn Lys Asn Gly Ile Asn Ile Ile Tyr Asn His
 1875 1880 1885

Tyr Glu Asn Leu Asn Lys Pro Asn Tyr Asn Asp Asn Ile Asn Arg Leu
 1890 1895 1900

Asn Ser Tyr His Gln Asn Ile His Ile Ala Asn Ser Ile His Pro Asn
 1905 1910 1915 1920

Arg Asn Gln Asn Lys Ser Phe Leu Thr Asn Gln Ala Asn Ser Thr Tyr
 1925 1930 1935

Ser Val Met Lys Asn Tyr Ile Asn Ser Asp Lys Pro Asn Leu Asn Gly
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Lys Lys Ser Val Arg Asn Ile Phe Asn Glu Ile Val Asp Glu Asn Val
 1955 1960 1965

Asn Lys Thr Phe Val His Lys Ser Val Phe Phe
 1970 1975

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 35 40 45

Gly His Asn Ile Leu Gly Asp Val Gln Tyr Asp Gly Thr Tyr Asn Ile
 50 55 60
 Asn Glu Gln Val Lys Lys Asn Ser Leu Phe Tyr Phe Lys Cys Lys Glu
 65 70 75 80
 Glu Ile Asn Leu Lys Asp Gly Asn Ile Ile Leu Asp Asp Lys Asn Arg
 85 90 95
 Lys Val Asp Asp Ile Asn Ile Thr Gly Asp Asp Lys Asn Ile Lys Val
 100 105 110
 Asp Asp Lys Asn Ile Lys Val Asp Asp Lys Asn Ile Thr Gly Glu Asp
 115 120 125
 Lys Asn Ile Thr Gly Glu Asp Lys Asn Ile Thr Gly Asp Asp Lys Asn
 130 135 140
 Ile Ile Phe Asp Val Asp Glu Ile Leu Ile His Gln His Asn Thr Ser
 145 150 155 160
 Asn Ser Asn Ile Tyr Ile Asn Cys Asn Asp Asn Asn Asn Asp Ile Arg
 165 170 175
 Asn Ser Ser Asn Val Gln His Tyr Tyr Asn Asp Lys Ile Lys Glu Asn
 180 185 190
 Ile Asn Lys Gln Asn Lys Lys Tyr Val Leu Ile Asn Asp Tyr Ile Asn
 195 200 205
 Asn Lys Tyr Ile Leu Ser Lys Asn Lys Thr Cys Lys Ile Asn Lys Gly
 210 215 220
 Lys Lys Leu Ile Lys Lys Lys Lys Val Asn Asn Ile Ser Arg Arg Arg
 225 230 235 240
 Asn His Ile Leu Tyr Lys Cys Arg Asn Lys Leu Tyr Asn Gly Asn Val
 245 250 255
 Phe Ser Asp Asp Ile Ile Lys Ser Glu Val Asn Val Cys Asn Ser Leu
 260 265 270
 Thr Val Leu His Lys Asn Tyr Asn Ile Asn Met Asp Asn Tyr Leu Asp
 275 280 285
 Asp Asn Ile His Thr Asn Asn Ser Asn Ile Tyr Asp Ile Asn Tyr Thr
 290 295 300
 Asn Glu Asn Val Ile Asn Ser Thr Cys Arg Tyr Tyr Pro Ile Gly Asn
 305 310 315 320
 Asn Asn Thr Leu Ser Lys Asp Glu Val Thr Lys Ser Ser Ser Lys Ile
 325 330 335
 Asn Ser Leu Ser Tyr Phe Asp Asp Ile Ile Asn Val Asn Lys Asn Asp
 340 345 350
 Ile Pro Ile Leu His Asp Lys Glu Asn Ile Asn Ile Ile Ser Asn Lys
 355 360 365
 Glu Ser Cys His Lys Asp Glu Lys Glu Glu Glu Lys Tyr Ile Met Tyr
 370 375 380
 Asn Ser Asn Leu Val Glu Glu Lys Lys Gln Lys Lys Met Ile Trp Asn
 385 390 395 400
 Ser Leu Asn Val Leu Pro Ile Asp Ile Leu Leu Lys Asn Gly His Asp
 405 410 415
 Glu Ile Asn Lys Glu Ile Cys Lys Lys Lys Lys Lys Ser Phe Phe Ser

420										425					430				
Gln	Asn	Asp	Ile	Lys	Ser	Lys	Met	Leu	Tyr	Asn	Asn	Lys	Ser	Tyr	Ser				
		435					440					445							
Lys	Ser	Glu	Lys	Val	Leu	Tyr	Thr	Asn	Asn	Lys	Asn	Ser	Asn	Thr	Phe				
		450				455					460								
Ile	Pro	Ile	Phe	Phe	Leu	Asn	Lys	Val	Gly	Asp	Lys	Phe	Lys	Asn	Ser				
465					470					475					480				
Glu	Asn	Ile	Tyr	Asp	Met	Tyr	Asn	Asn	Lys	Lys	Asn	Val	Tyr	Ile	His				
				485					490					495					
Asp	Lys	Lys	Ile	Tyr	Thr	Asn	Met	Tyr	Ser	Asn	Lys	Leu	Lys	Gln	Lys				
			500					505					510						
His	Tyr	Tyr	Ser	Thr	Ser	Asn	Ile	Asn	Leu	Leu	Tyr	Asn	Asn	Ile	Gly				
		515					520					525							
Lys	Val	Leu	Asp	Asn	Gly	Leu	His	Leu	Ser	Asn	Asn	Met	Tyr	Cys	Arg				
	530					535					540								
Leu	Asn	Ser	Asn	Pro	Pro	Tyr	Lys	Ser	Ile	Ser	Leu	Ile	Asn	Asn	Asn				
545				550						555						560			
Val	Phe	Phe	Tyr	Lys	Lys	Arg	Lys	Ser	Asn	Ser	Asn	Asn	Asn	Asn	Asn				
				565					570					575					
Asn	Asn	Asn	Ile	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Lys	Lys	Asn	His				
			580					585					590						
Val	Ile	Ile	Asn	Lys	Lys	Ile	Ser	Ser	Tyr	Asn	Ile	His	Tyr	Lys	Glu				
		595				600						605							
Arg	Lys	Asp	Ser	Phe	Lys	Glu	Asn	Phe	Leu	Phe	Phe	Lys	Glu	Lys	Ile				
	610					615					620								
Leu	Pro	Ser	Lys	Lys	Asp	Thr	Cys	Val	Phe	Asn	Glu	Arg	Gln	Lys	Asp				
625					630					635					640				
Leu	Phe	Glu	Lys	Ser	Asn	Glu	His	Ile	Lys	Cys	Val	Ser	Ser	Phe	Asn				
				645					650					655					
Asn	Thr	Ser	Asp	Asp	Ile	Ser	Ser	His	Ser	Ser	Val	Asn	Lys	Lys	Glu				
			660					665					670						
Pro	Phe	Phe	Ala	Leu	Lys	Asn	Asn	Ser	Ile	Arg	His	Ile	Pro	Lys	Glu				
		675				680						685							
Asn	Asn	Ile	Ile	Tyr	Thr	Ser	Gly	Lys	Ser	Phe	Asn	His	Val	Gln	Asp				
	690					695					700								
Lys	Glu	Lys	Thr	Val	Leu	Leu	Lys	Lys	Lys	Lys	Glu	Ile	Asn	Asp	Lys				
705					710					715					720				
Asn	Thr	Phe	Ser	Ser	Cys	Leu	Ile	Asn	His	Asn	Ile	Thr	Thr	Tyr	Thr				
				725					730					735					
Leu	Gln	Asn	Gly	Val	Asn	Lys	Asn	Leu	Asn	Met	Leu	Gly	Ile	Arg	Asp				
			740					745					750						
Ser	Ile	Tyr	Lys	Ile	Asp	Glu	Lys	Asn	Asn	Met	Leu	Lys	Glu	Cys	Tyr				
		755					760					765							
Asn	Gly	Asn	Asn	Asp	Ser	Asn	Asn	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys				
	770					775						780							
Leu	Ser	Phe	Ser	Cys	Asp	Ile	Ile	Asn	Asp	Asn	Ile	Thr	Pro	Tyr	Glu				
785					790					795					800				

Ser Asp Lys Glu Lys Asn Asn Ser Asn Asn Ile Lys Ser Met Asp Ile
 805 810 815
 Phe Asn Tyr Val Lys Arg Lys Ser Asn Leu Tyr Asn Asn Leu Ser Ser
 820 825 830
 Asn Arg Asp Ser Thr Val Asp Met His Asn Lys Tyr Asn Ser Glu Glu
 835 840 845
 Tyr Ile Asn Ile Gln Arg Thr Asn Lys Ile Tyr Glu Leu Ser Asn Lys
 850 855 860
 Arg Ile Arg Asn Tyr Lys Leu Tyr Ser Met Asp Glu Ile Phe Lys Val
 865 870 875 880
 Ser Leu Lys Glu Lys Lys Tyr Ile Asp Asn Ile Ser Asn Asn Met Glu
 885 890 895
 Arg Val Thr Tyr Lys Asn Glu Met Ile Asn Glu Lys Ile Ser Lys Met
 900 905 910
 Asp Asp Ile Leu Tyr Pro Cys Asp Lys Asn Lys Ser Leu Asn Met Ser
 915 920 925
 Cys Pro Val Ile Ile Glu Asn Asn Ile Ser Arg Glu Glu Asn Glu Lys
 930 935 940
 Asn Ser Ser Val Ile Leu Asn Lys Lys Lys Asn Glu Asn Met Phe Asn
 945 950 955 960
 Cys Val Gly Arg Leu His Cys His Met Gly Lys Met Asn Asn Gln Asp
 965 970 975
 Asn Ile Tyr Asp Gln Gly Asn Ile Lys Lys Asn Glu Glu Glu Ile Thr
 980 985 990
 Lys His Asp Glu Tyr Ile Ser Arg Glu Glu Lys Asn Lys Tyr Asn Ser
 995 1000 1005
 Lys Cys Ile Arg Asn Phe Asp Asp Tyr Lys Tyr Glu Gln Val Leu Ser
 1010 1015 1020
 Tyr His Thr Leu Asp Glu Asp Lys Lys Lys Asn Asp Met Asn Asn Leu
 1025 1030 1035 1040
 Ile Asp Met Asn Asn Glu Ala Ile Ile Glu Thr Val Asn Gly Val Ile
 1045 1050 1055
 Asn Asn Ile Ile Leu Asp Arg Lys Asp Asn Asn Ser Arg Lys Asp Met
 1060 1065 1070
 Glu Lys Glu Met Glu Lys Glu Met Glu Lys Lys Met Glu Lys Glu Met
 1075 1080 1085
 Glu Lys Val Met Glu Lys Glu Met Glu Lys Val Met Glu Lys Glu Val
 1090 1095 1100
 Glu Lys Glu Leu Lys Asn Glu Met Asn Asn Arg Met Asn Asn Arg Met
 1105 1110 1115 1120
 Asn Asn Glu Met Lys Asn Glu Ile Asn Ile Tyr Lys Asn Asn Glu Ile
 1125 1130 1135
 Tyr Val Asp Asn Asp Lys Glu Leu Glu Ile Val Asn Glu Glu Lys Lys
 1140 1145 1150
 Leu Ile Tyr Pro Phe Asn Tyr Glu Ser Asp Val His Lys Asn Met Asn
 1155 1160 1165

Met Ser Ile Asn Ile Asn Asn Cys Lys Asp Asp Tyr Asn Asn Ile Leu
 1170 1175 1180

Lys Glu Tyr Val Asp Asn Ser Cys Leu Ala Gln Lys Glu Glu Asn Ile
 1185 1190 1195 1200

Phe Arg Pro Leu Phe Asn Leu Asn Lys Lys Asp Lys Val Trp Lys Arg
 1205 1210 1215

Phe Asn Ile Lys Asn Asn Ile Lys Thr Ile Ile His Asn Glu Glu Met
 1220 1225 1230

Lys Arg Ile Tyr Gln Thr Ile Asn Lys Asn Val Phe Pro Ile Tyr Asn
 1235 1240 1245

Phe Asn Arg Tyr Glu Asn Phe Leu Ile Asn His Leu Thr Tyr Asn Phe
 1250 1255 1260

Pro Lys Asn Asp Leu Phe Lys Leu Ser Tyr Lys Val Ser Met Asn Asn
 1265 1270 1275 1280

Ile Arg Asn Leu Tyr Ile Ala Asn Lys His Ile Asn Asn Asn Tyr Asp
 1285 1290 1295

Tyr Met Asn Lys Leu Tyr Asn Gln Asn Ile Tyr Thr Leu Lys Tyr Gln
 1300 1305 1310

Val Ala Asn Ile Asp Asn Asp His His Ile Cys Lys Lys Gly Gly Gly
 1315 1320 1325

Leu Asp Tyr Ile Asn Met Asn Ile Ser Lys Glu Cys Lys Asn Arg Lys
 1330 1335 1340

Asp Lys Thr Tyr Leu Asn Lys Ile Phe His Tyr Lys Lys Lys Lys Asp
 1345 1350 1355 1360

Ala Arg Phe Phe Ile Asn Asp Glu Ile Gly Ser Asn Asp Tyr Met Tyr
 1365 1370 1375

Asp Ile Lys Lys Lys Tyr Ser Asn Asp Glu Asn Asn Tyr Lys Leu Asn
 1380 1385 1390

Glu Lys Met Asn Ile Ser Met Ser Asn Asp Glu Asp Met Ile Pro Thr
 1395 1400 1405

Leu Asn Ser Glu His Gly Asn Asn Phe Pro Ser Cys Gln Pro Asn Leu
 1410 1415 1420

Leu Glu Lys Lys Ser Thr Tyr Ile Asp Leu Asn Leu Tyr Asp Ser Asn
 1425 1430 1435 1440

Ser Met Asp Asp Phe Thr Glu Glu Lys Tyr Asn Phe Val Asn Asn Glu
 1445 1450 1455

Asn Asp Leu Phe Asn Thr Lys Arg Trp Lys Phe Asn Phe Ser Lys Gly
 1460 1465 1470

Lys Asn Leu Phe Asn Asn Lys Phe Phe Asn Val Ser Asn Glu Asp Gly
 1475 1480 1485

Val Phe Ser Phe Phe Lys Asn Met Asn Leu Phe Arg Glu Leu Asn Lys
 1490 1495 1500

Ser Asn Asn Ser Leu Lys Leu Glu Ser Val Lys Asn Ser Asn Asn Asn
 1505 1510 1515 1520

Cys Ser Asn Asn Lys Gly Asp Asp Asn Ile Gly Asn Met Glu Asn Met
 1525 1530 1535

Asn Thr Thr Asn Val Thr Ile Ala Ser Asp Glu His Ile Ser Thr Lys

52

Glu Asn Val Asp Phe Phe Asn His Ser Phe Phe Glu Asn Leu Asn Leu
 1925 1930 1935
 Glu Asn Lys Lys Lys Gly Tyr Ile Asp Glu Thr Asn Val Asn Glu Asn
 1940 1945 1950
 Tyr Glu Ser Asp Asn Glu Tyr Asp Ser Asp Glu Asp Asp Thr Glu Ser
 1955 1960 1965
 Asp Asn Asp Asp Glu Gln Asn Lys Glu Asn Glu Arg Gly Asp Glu Lys
 1970 1975 1980
 Asp Gly Tyr Glu Glu Met Asn Gly Gly Asp Lys Asn Glu Glu Met Asn
 1985 1990 1995 2000
 Gly Gly Asp Lys Asn Glu Glu Met Asn Val Gly Asp Lys Asn Gly Gly
 2005 2010 2015
 Ile Asn Glu Glu His Lys Asn Glu Gly Ile Asn Glu Glu His Lys Asp
 2020 2025 2030
 Glu Leu Ile Asn Lys Glu His Lys Asn Glu Arg Ile Asn Glu Glu His
 2035 2040 2045
 Lys Asn Glu Arg Ile Asn Glu Glu His Lys Asn Glu Gly Ile Asn Glu
 2050 2055 2060
 Glu His Lys Asn Glu Gly Ile Asn Glu Glu His Lys Asn Glu Arg Ile
 2065 2070 2075 2080
 Asn Glu Glu His Lys Asn Glu Gly Ile Asn Lys Leu Thr Tyr His Asn
 2085 2090 2095
 Met Asn Lys Asn Asn Ile Ser Asn Glu Asn Asn Tyr Asn Asp Asp Asp
 2100 2105 2110
 Ser Tyr Asp Glu Asp Asn Leu Val Ser Leu Lys Ile Ile Asn Leu Lys
 2115 2120 2125
 Tyr Leu Ser Lys Lys Asn Ser Leu Lys Asn Ile Leu Arg Glu Val Asn
 2130 2135 2140
 Phe Leu Lys Met Cys Glu His Pro Asn Val Val Lys Tyr Phe Glu Ser
 2145 2150 2155 2160
 Phe Phe Trp Pro Pro Cys Tyr Leu Val Ile Val Cys Glu Tyr Leu Ser
 2165 2170 2175
 Gly Gly Thr Leu Tyr Asp Leu Tyr Lys Asn Tyr Gly Arg Ile Ser Glu
 2180 2185 2190
 Asp Leu Leu Val Tyr Ile Leu Asp Asp Val Leu Asn Gly Leu Asn Tyr
 2195 2200 2205
 Leu His Asn Glu Cys Ser Ser Pro Leu Ile His Arg Asp Ile Lys Pro
 2210 2215 2220
 Thr Asn Ile Val Leu Ser Lys Asp Gly Ile Ala Lys Ile Ile Asp Phe
 2225 2230 2235 2240
 Gly Ser Cys Glu Glu Leu Lys Asn Ser Asp Gln Ser Lys Glu Leu Val
 2245 2250 2255
 Gly Thr Ile Tyr Tyr Ile Ser Pro Glu Ile Leu Met Arg Thr Asn Tyr
 2260 2265 2270
 Asp Cys Ser Ser Asp Ile Trp Ser Leu Gly Ile Thr Ile Tyr Glu Ile
 2275 2280 2285

Val Leu Cys Thr Leu Pro Trp Lys Arg Asn Gln Ser Phe Glu Asn Tyr
 2290 2295 2300
 Ile Lys Thr Ile Ile Asn Ser Ser Pro Lys Ile Asn Ile Thr Glu Gly
 2305 2310 2315 2320
 Tyr Ser Lys His Leu Cys Tyr Phe Val Glu Lys Cys Leu Gln Lys Lys
 2325 2330 2335
 Pro Glu Asn Arg Gly Asn Val Lys Asp Leu Leu Asn His Lys Phe Leu
 2340 2345 2350
 Ile Lys Lys Arg Tyr Ile Lys Lys Lys Pro Ser Ser Ile Tyr Glu Ile
 2355 2360 2365
 Arg Asp Ile Leu Lys Ile Tyr Asn Gly Lys Gly Lys Thr Asn Ile Phe
 2370 2375 2380
 Arg Asn Phe Phe Lys Asn Leu Phe Phe Phe Asn Asp Lys Asn Lys Lys
 2385 2390 2395 2400
 Lys Lys Pro Asn Lys Met Ile Ser Ser Lys Ser Cys Asp Ala Glu Met
 2405 2410 2415
 Phe Phe Glu Gln Leu Lys Arg Glu Asn Phe Asp Phe Phe Glu Ile Lys
 2420 2425 2430
 Leu Lys Asp Asp Glu Asn Ser Arg Ser Leu Asn Thr Phe Asn Ile Asn
 2435 2440 2445
 Ile Ser Lys Glu Arg Asp Asp Ile Ser Tyr Ser Ser Leu Asn Leu Glu
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 Glu Gln Ser Gln Lys
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 Tyr Phe Leu Asp Asp Asn Lys Glu Lys Asp Val Ser Lys Lys Arg Lys
 35 40 45
 Ala Gln Leu Lys Asp Glu Tyr Asp Asn Ile Ser Arg Ser Lys Glu Asn
 50 55 60
 Ile Asn Asn Ser Lys Lys Ile Lys Asn Glu Leu Ser Ile Lys Asp Asn
 65 70 75 80
 Met His Asp Tyr Ile Tyr Asp Asp Arg Ile Tyr Asn Asn Asp Lys Glu
 85 90 95
 Lys Asn Val Ile Lys Ser Asp Asn Lys Asn Val Ile Lys Ser Asp Asn
 100 105 110
 Lys Asn Val Ile Lys Ser Asp Asn Lys Asn Val Ile Lys Ser Asp Asn
 115 120 125

Lys Asn Val Ile Lys Ser Asp Asn Lys Asn Val Ile Lys Ser Asp Asn
 130 135 140
 Lys Asn Val Ile Lys Ser Asp Tyr Lys Ser Asp Asp Arg Asn Ala Cys
 145 150 155 160
 Asp Ile Tyr Lys Ser Asn Lys Lys Asn Val Pro Asp Asn Cys His Ile
 165 170 175
 Tyr Asp Asp Asn Ser Ser Val Glu Asn Leu Asp Gly Lys Asn Lys Leu
 180 185 190
 Asn Asn Ile Arg Asn Ile His Asn Asp Asn Ser Ser Ser Cys Asp Ile
 195 200 205
 Ser Asp Ile Lys Ser Glu Asp Glu Tyr Ile Glu Pro Tyr Glu Lys Lys
 210 215 220
 Asn Glu Glu Asn Ile Asn Glu Tyr Lys Asn Lys Lys Asn Ile Ala Asn
 225 230 235 240
 Glu Asn Ile Lys Glu Gly Lys Ser Ser Ile Tyr Asn Asp Glu His Asn
 245 250 255
 Tyr Asn Ser Leu Leu Tyr Asn Ser Cys Asn Gly Glu Ile Ser Lys Ile
 260 265 270
 Asn Lys Ile Ser Ser His Asn Asn Ile Asp Asn Asn Met Asp Asn Tyr
 275 280 285
 Asn Thr Phe Ala Asn Val Asn Asn Phe Ile Ile Tyr Ser Ser Asp Asp
 290 295 300
 Glu Asp Asn Ile Ser Asn Tyr Tyr Asn Gly Lys Asp Val Leu Asn Asp
 305 310 315 320
 Glu Ile Met Phe Pro Ile Lys Phe Asn Phe Glu Lys Leu Lys Lys Asn
 325 330 335
 Ile Tyr Val Ile Glu His Ile Asp Lys Ile Tyr Tyr Asp Thr Phe Leu
 340 345 350
 Asn Lys Asn Pro Ser Glu Lys Ser Val Phe Met Asn Asp Glu Ser Thr
 355 360 365
 Gly Tyr Leu Lys Asn Asp Val Asn Asp Lys Cys Val Val Asp Asn Ile
 370 375 380
 Asn Val Ile Asn Pro Ser Ser Val Asn Thr Leu Ser Asn Ile Ser Asn
 385 390 395 400
 Ile Arg Asn Glu Lys Ile Glu Asn Asn Asn Lys Asn Glu Lys Leu Ile
 405 410 415
 Lys Ser Tyr Pro Thr Gln Ser Lys Asn Val Met Ser Thr Phe Ser Phe
 420 425 430
 Trp Asn Ile Glu Lys Glu Thr Phe Ile Thr Lys Pro Leu Tyr Ala Gln
 435 440 445
 Asn Leu Arg Lys Lys Gln Phe Ser Leu Leu Asp Glu Ser Glu Glu Met
 450 455 460
 Ile Arg Asn Tyr Ser Ser Asn Gln Tyr Ser Ile Lys Phe Val Pro Arg
 465 470 475 480
 His Leu Leu Tyr Val Met Ser Gln Val Ala Ser Arg Ser Phe Phe Asp
 485 490 495
 Pro Leu Tyr Arg Lys Gln Leu Phe Phe Arg Tyr

500

505

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 Asn Glu Gly Gly Glu Ser Phe Phe Asp Asn Asn Ala Glu Gln Tyr Leu
 35 40 45
 Ile Ile Ser Leu Arg Gln Lys Leu Asn Pro Val Ile Lys Lys Ile Lys
 50 55 60
 Arg Val Arg Tyr Lys Phe Asn Asn Ile Ile Pro Asp Phe Leu Val Gly
 65 70 75 80
 Lys Asn Asn Ala Cys Leu Phe Ile Ser Met Lys Tyr His Arg Leu Arg
 85 90 95
 Ser Asn Tyr Leu Lys Ala Arg Ile Glu Thr Leu Ser Asn Lys Tyr Asn
 100 105 110
 Asn Arg Ile Leu Leu Cys Leu Val Asp Met Glu Asn Ile Glu Asn Ser
 115 120 125
 Leu Gly Glu Ile Asn Gln Leu Ser Phe Ser Phe Asn Met Thr Leu Ile
 130 135 140
 Leu Cys Trp Ser Asn Glu Glu Cys Ala Arg Val Ile Glu Asp Phe Arg
 145 150 155 160
 Ile Tyr Glu Lys Lys Ile Ser Tyr Ile Ile Lys Lys Lys Ile Ser Ser
 165 170 175
 Ser Asn Gln Glu Glu Lys Ile His Glu Leu Leu Lys Lys Ile Arg Cys
 180 185 190
 Ile His Thr Thr Asp Cys Ile Thr Leu Thr Thr Lys Phe Lys Asn Phe
 195 200 205
 Lys Asn Ile Ile Gln Ala Lys Lys Glu Asp Leu Ile Ser Cys Ser Gly
 210 215 220
 Leu Gly Ile Lys Lys Ile Gln Ala Leu Met Ala Thr Phe Asn Asp Pro
 225 230 235 240
 Phe Phe

<210> 32
 <211> 23
 <212> PRT
 <213> Plasmodium falciparum

<400> 32
 Gly Ser Val Val Trp Leu Ala Leu Gln Thr Leu Thr Leu Gln Thr Trp
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 Val Gln Ile Pro Ala Glu Pro
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<210> 33
 <211> 635
 <212> PRT
 <213> Plasmodium falciparum

<400> 33
 Met Ser Leu Tyr Met Asn Ile Phe Glu Gln Ile Glu Ile Ile Leu Glu
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 Lys Cys Asn Asn Glu Thr Phe Ile Lys Ile Asn Thr Leu Ile Asp His
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 Ile Ile Arg Asn Tyr Ala Asn Glu Asn Met Lys Glu Ile His Glu Arg
 35 40 45
 Lys Lys Gly Asn Asp Asn Asn Asn Lys Lys Lys Lys Lys Lys Lys Lys
 50 55 60
 Glu Asn Asn Thr Asn Thr Ile Arg Asn Tyr Phe Asn Leu Val Asp Lys
 65 70 75 80
 Glu Asn Asn Leu Lys Asn Asn Asn Asn Asn Asp Asp Gly Val Thr Asn
 85 90 95
 Val Met Glu Gln Asp Lys Asn Lys Asp Cys Leu Leu Ser Leu Thr Ile
 100 105 110
 Lys Asn Asn Asn Asn Asn Lys Thr Ile Ile Asn Met Phe Phe Phe Phe
 115 120 125
 Gly His Phe Asn Ile Met Ile Ile Ile Tyr Tyr Val Ile Tyr Lys Leu
 130 135 140
 Lys Met Phe Asp Lys Asp Leu Phe Ile His Glu Lys Asn Ser Asn Ile
 145 150 155 160
 His Thr Asn Gln Ser Tyr Thr Ala Asp Ser Ile Ser Asp Asp Leu Asn
 165 170 175
 Lys Val Gly Ser Asp Asn Asn Arg Asn Lys Asn Ile Ile Met Arg His
 180 185 190
 Thr Asn Ile Asn Asn Lys Glu His Tyr Leu Gln Lys Lys Tyr Asn Ile
 195 200 205
 Gln Asp Asp Glu Glu Glu Asp Asn Glu Thr Ile Arg Ser Asp Ser Lys
 210 215 220
 Leu Arg Asp Ile Tyr Ser Asp Ser Gln Ser Lys Asp Ile Met Met Ser
 225 230 235 240
 Ser Ser Pro Asn Lys Glu Glu Glu Ser Met Ser Ser Asp Asn His Asn
 245 250 255
 Lys Asp Ile Asn Ser Ser Asp Asn Gln Asn Lys Asp Ile Asn Ser Ser
 260 265 270
 Asp His Asn Met Asn Asp Ser Thr Asn Glu Ser Thr Thr Thr Ser Leu
 275 280 285
 Ser Thr Ser Ile Asn Asn Thr Asn Arg Asn Lys Lys Asn Arg Lys Lys
 290 295 300
 Asn Asn Ile Asn Ile Asn Asn Asn Asn Asn Asn Ser Asn Asn Ile Asn
 305 310 315 320
 Ser Ser Ser Asn Asn Asn Ser Gly Val Tyr His Tyr Leu Pro Ser Gln
 325 330 335

Lys Tyr Asn Asn Lys Tyr Asn Thr Tyr Asn Asn Lys Asp His Ile Ile
 340 345 350
 Tyr His Asn Lys Cys Ile Thr His Ile Leu Cys Ser Gln Leu Met Tyr
 355 360 365
 Leu Asp Met Asn Ser Phe Asn Gln Ala Ile Gln Asp Ile Val Lys Thr
 370 375 380
 Asn Lys Tyr Lys Leu Leu Arg Ile Ile Ile Leu Glu Ala Phe Asp Ser
 385 390 395 400
 Leu Asn Glu Tyr Tyr Arg Lys Asn Phe Leu Asn Lys Leu Lys Lys Cys
 405 410 415
 Asn Val Leu Ile Phe Ile His Ser Thr His Ala Leu Asn Asp Thr Phe
 420 425 430
 Leu His Asn Cys Leu Tyr Ile Arg Ile Pro Lys Pro Asp Lys Ile Leu
 435 440 445
 Phe Asn Asn His Ile Leu Asp Phe Leu Lys Thr Asn Tyr Lys Ile Asn
 450 455 460
 Asn Leu Asn Asn Gln Lys Lys Gln Tyr Ile Ile Asn Val Leu Asn Tyr
 465 470 475 480
 Cys Asn Phe Asp Ile Pro Leu Ile Leu Ala Leu Leu Tyr Ile Ile Gln
 485 490 495
 Leu His Lys Phe Pro Asp Ile Lys Lys Ile Ile Lys Leu Ile Ile Asn
 500 505 510
 Ser Asn Ile Lys Lys Leu Ile Asn Val Ile His Lys Cys Ile Ile Ser
 515 520 525
 Asn Asn Ser Phe Phe Val Ile Arg Asn Ile Leu Tyr Asn Ile Leu Tyr
 530 535 540
 Thr Tyr Asn Phe His Leu His Asn Phe Leu Asn Thr Phe Cys Lys Glu
 545 550 555 560
 Leu Ala Ala Tyr His Lys Asn Asp Asn Asn Tyr Lys Lys Asp Leu Tyr
 565 570 575
 Ala Leu Phe Ser Lys Tyr Thr Tyr Ile Thr Ser Met His Asp Met His
 580 585 590
 Ile Cys Ser Leu Glu Asn Leu Cys Ser Asn Ile Ile Leu Leu Glu Lys
 595 600 605
 Lys Tyr Ala Lys Thr Phe Asn Glu Val Asp Thr Asn Ser Glu Asp Thr
 610 615 620
 Glu Asp Phe Ser Ile Asn Ile Lys Leu Glu Glu
 625 630 635

<210> 34
 <211> 432
 <212> PRT
 <213> Plasmodium falciparum

<400> 34
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 1 5 10 15
 Ser Phe Lys Lys Lys Val Asp Thr Glu Ile Phe Cys Leu Asn Glu Tyr
 20 25 30

Asn	Val	Thr	Gly	Leu	Cys	Thr	Lys	Ala	Asn	Cys	Pro	Leu	Ser	Asn	Ser
	35						40					45			
Val	Tyr	Ser	Thr	Ile	Ile	Leu	Asp	Lys	Gly	Glu	Ile	Tyr	Leu	Tyr	Met
	50					55					60				
Lys	Ser	Val	Glu	Arg	Ala	His	Leu	Pro	Ser	Ala	Leu	Trp	Ser	Arg	Val
	65				70					75					80
Leu	Leu	Ser	Leu	Asn	Lys	Lys	Glu	Ala	Phe	Asn	Val	Ile	Tyr	Lys	Glu
				85					90					95	
Leu	Lys	Phe	Thr	Gln	Asn	Ile	Lys	His	Ile	Lys	Lys	Cys	Met	Lys	Arg
			100					105					110		
Tyr	Val	Arg	Ile	Lys	Glu	Ile	Leu	Lys	Arg	Ser	Arg	Lys	Leu	Ile	Leu
		115					120					125			
Gln	Lys	Gln	Val	Lys	Met	Met	Pro	Ile	Lys	Lys	Lys	Thr	Glu	Arg	Arg
	130					135						140			
Asp	Lys	Thr	Arg	Glu	Lys	Lys	Ala	Leu	Lys	Ala	Ala	Asn	Leu	Leu	Asn
	145				150					155					160
Asn	Val	Glu	Lys	Glu	Leu	Leu	Asn	Arg	Leu	Asn	Thr	Gly	Ile	Tyr	Gly
				165					170					175	
Ser	Leu	Tyr	Lys	Phe	Leu	Thr	Pro	Lys	Lys	Lys	Met	Lys	Asn	Lys	Asp
			180					185					190		
Ser	Glu	Leu	Thr	Lys	Ile	Phe	Asp	Val	Met	Gly	Glu	Asn	Lys	Asp	Glu
		195					200					205			
Met	Lys	Lys	Lys	Gly	Lys	Lys	Gly	Lys	Asp	Glu	Asn	Val	Asn	Tyr	Glu
	210					215					220				
Thr	Met	Ser	Gln	Glu	Gly	Gly	Gly	Gln	Glu	Asp	Asp	Asp	Glu	Asp	Val
	225				230					235					240
Asp	Met	Asp	Asp	Asp	Asp	Glu	Asp	Val	Asp	Met	Asp	Asp	Glu	Asp	Glu
				245					250					255	
Asp	Val	Asp	Met	Asp	Asp	Glu	Asp	Glu	Asp	Val	Asp	Met	Asp	Asp	Glu
			260					265					270		
Asp	Glu	Asp	Val	Asp	Met	Asp	Asp	Glu	Asp	Glu	Asp	Val	Asp	Met	Asp
		275						280				285			
Asp	Glu	Asp	Glu	Asp	Val	Asp	Met	Asp	Asp	Glu	Asp	Glu	Asp	Val	Asp
	290					295					300				
Met	Asp	Asp	Val	Asp	Asp	Asp	Asp	Glu	Asp	Val	Asp	Met	Asp	Asp	Val
	305				310					315					320
Asp	Asp	Asp	Asp	Glu	Asp	Val	Asp	Met	Asp	Asp	Val	Gly	Asp	Asp	Asp
				325					330					335	
Asp	Glu	Gly	Gly	Ile	Tyr	Asp	Asp	Asn	Asp	Glu	Asp	Asp	Tyr	Asp	Asn
			340					345					350		
Tyr	Asn	Asp	Asn	Asp	Lys	Asp	Ser	Val	Glu	Glu	Ser	Thr	Ser	Ile	Ser
		355					360					365			
Asn	Asp	Lys	Lys	Lys	Lys	Lys	Lys	Arg	Lys	Arg	Lys	Glu	Tyr	Lys	Lys
	370					375						380			
Glu	Tyr	Val	Asp	Asn	Glu	His	Ile	Lys	Asn	Leu	Gln	Ala	Asn	Gly	Lys
	385				390					395					400
Leu	Ala	Met	Asp	Asp	Asp	Glu	Ile	Glu	Glu	Met	Asn	His	Asn	Phe	Arg

405

410

415

Arg Lys Lys Lys Ser Asn Ser Lys Lys Glu Lys Gly Lys Tyr Cys Met
 420 425 430

<210> 35
 <211> 560
 <212> PRT
 <213> Plasmodium falciparum

<400> 35

Met Ile Met Ser Tyr Lys Lys Lys Asn Asn Asn Asp Val Ile Asn Asn
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Ile Gln Arg Ala Lys Asn Asp Leu Phe Phe Ile Lys Pro Ser Val Lys
 20 25 30

Leu Asn Leu Cys Ser Ser Lys Phe Ile His Arg Ile Lys Ser Val Asn
 35 40 45

Lys Arg Tyr Val Glu Lys Asn Glu Tyr Ile Gln Gln Ile Asp Asn Asp
 50 55 60

Ile Glu Glu Lys Lys Lys Lys Lys Lys Thr Thr Ser Lys Arg Asn Asn
 65 70 75 80

Lys Ser Ser Asn Gln Ile Asn Asp Asp Tyr Glu Thr Phe Leu Ile Val
 85 90 95

Asp Gly Ser Ser Ile Leu Phe Lys Asn Phe Phe Gly Met Pro Phe Leu
 100 105 110

Lys Asn Asp Asn Asp Val Asn Leu Ser Thr Ile Tyr Gly Phe Ile Gln
 115 120 125

Ser Leu Asn Lys Ile Tyr Asn Leu Phe Leu Pro Thr Tyr Ile Ala Ile
 130 135 140

Ile Phe Asp Ser Lys Thr Ser Asn Asn Asp Lys Lys Lys Ile Tyr Ala
 145 150 155 160

Asn Tyr Lys Ile Phe Arg Arg Lys Asn Pro Asp Glu Leu Tyr Glu Gln
 165 170 175

Leu Lys Ile Val Ser Asn Phe Cys Asp Thr Ile Gly Ile Lys Thr Ile
 180 185 190

Ser Ser Thr Asn Ile Glu Ser Asp Asp Tyr Ile Ala Arg Ile Val Asp
 195 200 205

Asn Ile Ser Asn Thr Leu Lys Glu Lys Lys Gln Lys Asp Phe Ser Phe
 210 215 220

Val Asn Asn His Gln Glu Lys Glu Pro Pro Pro Met Tyr Thr Tyr Met
 225 230 235 240

Lys Asn Asn Val Tyr Asp Asn Ala Gly Ser Ile Gly Thr Asn Lys Ile
 245 250 255

Phe Asp Lys Glu Pro Asn His Ile Asn Gly Asn Ile Asn Gly Asn Val
 260 265 270

Asn Asp His Thr Asn Gly Asn Val Asn Asp His Ile Asn Gly Asn Ile
 275 280 285

Asn Asp His Ile Asn Gly Asn Ile Asn Asp His Ile Asn Asp His Thr

290				295				300							
Asn	Asp	His	Thr	Asn	Asp	His	Thr	Asn	Asp	His	Thr	Asn	Asp	His	Thr
305				310				315				320			
Asn	Asp	His	Thr	Asn	Asp	His	Leu	Asn	Asp	Tyr	Glu	Tyr	Tyr	Glu	Tyr
				325				330						335	
Tyr	Asn	Thr	Asn	Asp	Asp	Asp	His	Tyr	Asn	Ile	Asn	Asp	Asp	Asp	His
			340					345				350			
Tyr	His	Ile	Asn	Asp	Asp	Ala	Tyr	Asn	Asn	Phe	Tyr	Asp	Asn	Ile	Tyr
		355					360					365			
Ala	Glu	Glu	Asn	Val	Ser	Cys	His	Glu	Asn	Val	Ala	Thr	Asn	Asn	Ile
	370					375					380				
Asp	Lys	Lys	Lys	Lys	Phe	Arg	Val	Ile	Val	Val	Ser	Ser	Asp	Lys	Asp
385					390					395					400
Leu	Leu	Gln	Leu	Leu	Glu	Tyr	Asn	Asn	Glu	Thr	Tyr	Asn	Met	Asp	Ile
			405						410					415	
Ser	Ile	Cys	Gln	Pro	Asn	Lys	Lys	Tyr	Arg	Leu	Val	Asn	Ser	His	Leu
			420					425				430			
Phe	Tyr	Glu	Glu	His	Glu	Ile	Leu	Pro	Ser	Gln	Tyr	Ser	Asp	Tyr	Leu
		435					440					445			
Ile	Leu	Thr	Gly	Asp	Lys	Thr	Asp	Gly	Ile	Ser	Gly	Val	Pro	Tyr	Ile
	450					455					460				
Gly	Asp	Lys	Thr	Ser	Lys	Cys	Leu	Leu	Lys	Glu	Tyr	His	Asn	Ile	Glu
465					470					475					480
Asn	Ile	Leu	Lys	Asn	Leu	His	Lys	Leu	Pro	Ser	Lys	Leu	His	His	Ile
			485					490						495	
Phe	Leu	Asn	Asn	Ile	Glu	Asn	Ile	Asn	Thr	Phe	Arg	Lys	Leu	Ile	Lys
			500					505					510		
Leu	Lys	Cys	Glu	Thr	Asn	Glu	Ser	Leu	Val	Phe	Asp	Asp	Tyr	Lys	Gln
		515					520					525			
Lys	Arg	Ile	Lys	Asn	Phe	Glu	Gln	Phe	Arg	Asn	Phe	Ala	Asp	Lys	Tyr
	530					535				540					
Ser	Leu	His	Lys	Leu	Leu	Lys	Lys	Ser	Val	Ile	Val	Asn	Tyr	His	Asp
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<210> 36
 <211> 797
 <212> PRT
 <213> Plasmodium falciparum

<400> 36
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 Cys Asn Asn Thr Asn Glu Cys Ile Asn Phe Asp Leu Ser Ser Thr Ile
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 Gln Gly Phe Leu Asn Cys Leu Asp Arg Asn Val Leu Glu Asn Ile Asp
 35 40 45
 Lys Gly Leu Gly Glu Asn Glu Tyr Glu Lys Glu Val Val Asp Asn Phe

50	55	60
Thr Ser Ala Ala Ile Phe Val Glu Asn Cys Val Lys Ile Phe Ser Gln		
65	70	75 80
Lys Ile Glu His Leu His Asn Leu Ala His Asn Thr Leu Tyr Asn Ile		
	85	90 95
Tyr Lys Glu Asn Lys His Asn Ser Ser Ser Lys Lys Asn Gln Leu Ile		
	100	105 110
Met Ser Asp Glu Glu Glu Tyr Leu Tyr Ile Asn Glu Ile Lys Asn Met		
	115	120 125
Lys Asn Thr Gln His Asp Asn Asp Ile Ile Glu Asp Asp Ile Leu Ile		
	130	135 140
Lys Thr Ile Pro Phe Pro Thr Phe Leu Phe Ser Asp Asn Ile Lys Lys		
	145	150 155 160
Thr Lys Asp Ile Asn Glu Asp Lys Arg Lys Thr Asn Phe Asn Asn Asn		
	165	170 175
Glu Glu Asp Lys Glu Lys Asp Asn Lys Asn Lys Asp Asn Asp Ile Asp		
	180	185 190
Ala Ile Asn Glu Phe Glu Ile Thr Asp Asn Asn Ser Val Asn Thr Leu		
	195	200 205
Asn Phe Glu Lys Ile Phe Ile Glu Asn Asp Gly Ile Leu Leu Leu Asp		
	210	215 220
Ile Asn Asp Tyr Asn Val Phe Ile Asp Asp Pro Tyr Asn Phe Ser Ile		
	225	230 235 240
Gln Asn Lys Asn Ser Thr Ile Leu Phe Glu Lys Tyr Asp Phe Phe Ser		
	245	250 255
Arg Arg Ser Thr Tyr Leu Ser Ser Asn Thr Leu Ser Lys Tyr Val Val		
	260	265 270
Glu Asn Lys Asn Met Asp His Ile Tyr Lys Leu Tyr Asn His Ile Thr		
	275	280 285
Asp Ile Ile Asn Lys Asn Ile Cys Phe Asp Ile Phe Leu Phe Lys Gln		
	290	295 300
Asp Phe Phe Asp Tyr Asp Phe Ser Leu Gly Ile Leu Lys Asn Lys Lys		
	305	310 315 320
Ser Ile Leu Asn Lys Phe Lys Gln Gln Gln Lys Lys Leu His Pro Leu		
	325	330 335
Glu Glu Asn Thr His Met Asp Thr His His Ile Asn Asn Asn His His		
	340	345 350
Leu Gln Lys Tyr Asp Leu Asn Arg Pro Leu Pro Asn Tyr Tyr Met Leu		
	355	360 365
His Cys Tyr Asn Ile Lys Asn Tyr Gln Asp Phe Phe Arg Tyr Met Gln		
	370	375 380
Pro Asn Tyr Ile Leu Glu Ile Met Lys Arg His Ile Ile Lys Glu Ile		
	385	390 395 400
Tyr Asn Thr Asn Gln Gln Glu Arg Ala Ile Gln Lys Glu Ala Tyr Glu		
	405	410 415
Ile Tyr Asn Glu Gln Thr Lys Lys Lys Asn Asp His Lys Glu Asn Asn		
	420	425 430

Asn Ile Asp Val Pro Lys Tyr Lys Asp Asn Thr Lys Cys Tyr Asp Ser
 435 440 445
 Pro Phe Tyr Asn Tyr Tyr Ile Ser Asn Asn Ile Ile Gln Phe Asp His
 450 455 460
 Leu Ile Asp Asp Asp Met Ile Tyr Phe Asp Glu Tyr Phe Tyr Lys Ser
 465 470 475 480
 Leu Ile Leu Tyr Asn Thr Asn Ile Asn Asp Leu His Lys Asn Thr Asn
 485 490 495
 Asn Asn Gln Thr Asn Asp Glu Thr Asn Ile Ile Asn Asn Met Lys Asp
 500 505 510
 Glu Lys Gln Lys Asn Leu Ile Ile Tyr Ser Asn Ile Asn Asn Phe Ser
 515 520 525
 Asn Asp Gln Lys Leu Phe Asn Gln Ile Lys Ile Pro Glu Leu Tyr Ile
 530 535 540
 Gln Lys Leu Gly Leu Asn Phe Ser Tyr Tyr His Leu Glu Pro Leu Ile
 545 550 555 560
 Tyr Asn Phe Ile Lys Thr Leu Lys Lys Lys Asn Asp Phe Glu Lys Phe
 565 570 575
 Phe Ser Val Asn Leu Phe Asp Asp Lys Pro Ile Tyr Glu Phe Asp Ile
 580 585 590
 Leu Arg Asp Asp Glu Tyr Asp Glu Gln Lys Asn Glu Asp Asn Lys Asn
 595 600 605
 His Ile Glu Glu Asn Ile Asn Phe Glu Asn Ile Thr Asp Lys Asn Ile
 610 615 620
 Leu Asn Asp Glu Met Asp Asn Ile Pro Ile Ala Ile Phe Glu Asn Asp
 625 630 635 640
 His Leu Asp Asn Thr Phe Ile Met Asn Asp Asp Gln Glu Leu Gln Asp
 645 650 655
 Arg Val Ser Lys Trp Asn Ala Phe Leu Glu Glu Lys Leu Glu Ile Leu
 660 665 670
 Lys Arg Gln Pro Lys Tyr Asp Leu Asp Leu Tyr Lys Lys Asn Ile Ile
 675 680 685
 Asn Tyr Thr Ile Asn Asn Gly Glu Asn Ile Leu Phe Thr Lys Leu Ile
 690 695 700
 Lys Asn Lys Asp Lys Phe Glu Ile Ser Arg Asn Phe Leu Thr Thr Leu
 705 710 715 720
 Met Leu Ile Asn Ala Asp Ile Leu Asn Ile Lys Lys Ile Asn Lys His
 725 730 735
 Lys Lys Ser Asn Asn Ile Ser Asn Tyr Glu Ile His Ile Lys Lys Glu
 740 745 750
 Asn Leu Gln Gln Tyr Leu Ser Ile Ser Lys Gln Val Gln Asn Lys Ser
 755 760 765
 Phe Leu Ile Lys Glu Lys Lys Arg Lys Lys Asn Lys Gln His Leu Thr
 770 775 780
 Asn Gly Met Lys Asp Thr Ser Lys Lys Lys Gln Lys Ile
 785 790 795

<210> 37
 <211> 2295
 <212> PRT
 <213> Plasmodium falciparum

<400> 37

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Met Ile Lys Asn Val Phe Tyr Leu Asn Phe Ile Phe Ser Phe Phe Leu
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Leu Ile Ile Lys Cys Asp Glu Ser Val Ser Asn Gly Arg Lys Glu Ile
           20           25           30

Tyr Phe Asp Asp Asp Glu Lys Leu Lys Leu Ser Ser Phe Phe Asp Arg
           35           40           45

Ser Thr Asn Ile Asn Leu Asp Val Gly Glu Asn Asp Glu Leu Ser Ser
  50           55           60

Tyr Val Pro Arg Glu Val Asp Glu Lys Lys Lys Lys Asn Lys Lys Asp
  65           70           75           80

Ile Asp Ser Lys Glu Asn Ser Lys Ser Gly Asn Asn Ile Tyr Asn Lys
           85           90           95

Asp Asn Thr Lys Asn Asn Glu Asp Val Asn Tyr Asn Val Val Leu Lys
           100           105           110

Asp Gly Arg Ala Lys Glu Gly Ile Ile Thr Asp Glu Lys Arg Arg Ser
           115           120           125

Ser Thr Lys Asp Gly Lys Asn Lys Glu Gln Asn Asn Asn Lys Met Asn
           130           135           140

Ser Asp Asp Val His Asp Asn Asn Asn Asn Met Asn Asp Ile Asn Phe
           145           150           155           160

Val Val Glu Tyr Asn Lys Met Ile Asp Asn Tyr Asp Lys Ile Leu Asp
           165           170           175

Glu Leu Ile Leu Lys Ser Ile Asn Arg Asn Asn Tyr Asn Tyr Phe Asn
           180           185           190

Met Leu Asp Glu Tyr Ser Leu Gln Thr Lys Leu Asn Lys Glu Met Tyr
           195           200           205

Asp Ser Leu Asn Tyr Leu Ile Arg Leu Met Asn Asn Lys Asn Ser Arg
           210           215           220

Lys Tyr Phe Ile Ser Phe Ser Asn Asn Glu Lys Lys Lys Ile Ile Lys
           225           230           235           240

Asn Asp Met Asn Glu Asn Ile Tyr Ile Arg His Phe Ile Val Ser Leu
           245           250           255

Phe Arg Trp Tyr Asn Asn Phe Lys Leu Ile Glu Thr Cys Phe Asp Lys
           260           265           270

Asn Asn Phe Ile Tyr Tyr Ile Asp Glu Asn Lys Ile Tyr Ser Tyr Lys
           275           280           285

Tyr Asn Tyr Lys Leu Met Leu Asn Leu Phe Ser Ser Glu Asn Phe Leu
           290           295           300

Tyr Tyr Ile Asn Leu Ser Lys Phe Ser Leu Leu Glu Ile Ile Asp Asn
           305           310           315           320

Tyr Asn Lys Tyr Ser Phe Ile Ile Asn Asn Ile Lys Arg Asp Tyr Pro
           325           330           335

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Asn Asn Met Tyr Val Cys Gln Ser Phe Tyr Asp Phe Ile Tyr Ser Tyr
 340 345 350
 Phe Leu Ser Tyr Asn His His Phe Phe Asp Lys His Lys Tyr Leu Ile
 355 360 365
 Asn Met Asp Ile Trp Asn Asn Ser Ile Gln Thr Lys Gly Gln Ile Gly
 370 375 380
 Asn His Lys Leu Tyr Lys Lys Leu Lys Lys Leu Asn Glu Asn Leu Ile
 385 390 395 400
 Leu Tyr Asn Tyr Ile Lys Asn Asp Asp Ser Glu Met Ile Pro Tyr Val
 405 410 415
 Thr Leu Glu Met Arg Met Ile Phe Ser Asn Phe Thr Asn Leu Leu Ile
 420 425 430
 Asp Ile Leu Asn Lys Leu Tyr Asn Ile Asp Tyr Gln Asp Asn Ile Lys
 435 440 445
 Gln Glu Asn Val Asn Val Asn Pro Gln Arg Asp Ala Pro Gln Asp Tyr
 450 455 460
 Val His Asn Lys Asn Asp Val Asp Val Ser Leu Lys Asn Val Lys Glu
 465 470 475 480
 Pro Lys Lys Val Glu His Asn Lys Ala Met Ser Asn Tyr Glu Thr Asp
 485 490 495
 Glu Arg Gly Asp Met Ile Tyr Asp Asn Thr Asn Lys Glu Lys Phe Glu
 500 505 510
 Lys Ser Glu Gly Thr Phe Asn Asn Ile Ser Gly Gly Glu Asp Thr Phe
 515 520 525
 Lys Asn Ile Ser Gly Gly Glu Asp Thr Phe Lys Asn Ile Ser Glu Gly
 530 535 540
 Asp Gly Glu Val Asp Gly Asp Gly Glu Gly Asp Gly Asp Gly
 545 550 555 560
 Glu Gly Ala Asp Asp Ser Ser Val Asp Thr His Asn Asn Lys Asn Asp
 565 570 575
 Gly Lys Glu Ser Glu Ser Asp Val Trp Asn Leu Leu Met Asp Ser Tyr
 580 585 590
 Lys Lys Leu Ala Asn Asp Glu Asn Phe Lys Lys Tyr Asn Lys Tyr Ile
 595 600 605
 Leu Lys Asn Leu Asp Lys Phe Leu Asn Met Ser Ser Glu Lys Lys Glu
 610 615 620
 Asp Ile Asn Ser Tyr Lys Asn Lys Tyr Glu Leu Lys Glu Gly Ile Ile
 625 630 635 640
 Tyr Asn Lys Val Ser Asp Lys Tyr Ile Pro Leu Ile Phe Asn Pro Thr
 645 650 655
 Lys Asp Val Phe Thr Ser Ile Asn Gln Ile Asn Ile Lys Ser Lys Ile
 660 665 670
 Asn Phe Phe Asn Ile Tyr Glu Tyr Leu Ile Thr Ile Thr Lys Tyr Lys
 675 680 685
 Glu Asn Lys Asn Phe Tyr Asp Asp Leu Leu Lys Cys Arg Arg Glu Ile
 690 695 700
 Phe Phe Lys Asp Arg His Leu Leu Glu Asn Asn Asn Ile Met Asp Lys

705	710	715	720
Gln Glu Glu Leu Lys Lys Asn Ile Arg Asn Leu Met Arg Ile His Glu	725	730	735
Val Ser Asn Glu Gly Asn Asn Arg Asn Thr Ile Asn Arg Lys Tyr Lys	740	745	750
Lys Tyr Gly Thr Tyr Asp Tyr Asp Lys Met Asn Glu Leu Tyr Tyr Val	755	760	765
Glu Lys Asn Ile Leu Asn Val Asn Asp Thr Asn Thr Phe Asn Phe Met	770	775	780
Asn Asn Lys Glu Lys Asp Lys Asn Tyr Phe Asp Ile Asn Lys Thr Met	785	790	795
Arg Ile Tyr Asp Tyr Tyr Asn Asn Ile Asn Leu Asn Ile Phe Thr Pro	805	810	815
Ala Ala Ile Lys Met Lys Asp Lys Ile Tyr Asp Gln Leu Lys Leu Leu	820	825	830
Arg Ser Asn Phe Val Glu Lys Leu Lys Asn Glu Ser Ile Cys Val Leu	835	840	845
Ser Phe Leu Tyr Leu Ile Gly Ile Asn Asp Asp Asn Gly Lys Leu His	850	855	860
Phe Pro Tyr Gly Phe Pro Arg Asn Ile Asp Phe Ser Val Lys Leu Ile	865	870	875
Arg Glu Gly Lys Asp Gly Leu Cys Asn Phe Leu Ser Gly Val Leu Tyr	885	890	895
His Ile Asn Leu Pro Ile Phe Val Asn Asn Ser Ser Ile Ser Ile Ser	900	905	910
Thr Glu Met Asn Asp Asp Val Leu Glu Met Asn Asp Asn Ser Ile Asn	915	920	925
Ser Phe Phe Tyr Ile Tyr Tyr Lys Asn Asn Glu Asn Ile Arg Asn His	930	935	940
Asp Phe Leu Ser Asp Glu Asn Arg Ile Ile Pro Arg Lys Glu Asp Asn	945	950	955
Ile Lys Ser Lys Ile Ile Ser Tyr Ser Leu Gly Ser Ser Lys Asp Asp	965	970	975
Phe Phe Ser Lys Leu Ala Phe Thr Asn Asn Val Ile Arg Leu Lys Tyr	980	985	990
Lys Asn Lys Thr Asn Asn Thr Tyr Leu Lys Asp Tyr Phe Asp Phe Thr	995	1000	1005
Phe Asp Lys Ile Asn Tyr Lys Asn Ser Val Ile Lys Asn Asn Val Ser	1010	1015	1020
Pro Phe Leu Thr Thr Cys Asp Tyr Leu Leu Ser Asn Ile Leu Gly Ala	1025	1030	1035
Val Val Asp Ser Leu Arg Asn Ser Ser Thr Leu Glu Ser Gly Val Tyr	1045	1050	1055
Glu Glu Asn Ile Asn Asp Lys Asn Lys Asn Ile Ile Gln Asn Thr Val	1060	1065	1070
Val Gln Asn Lys Asn Leu Phe Glu Tyr Phe Val Lys Leu Ala Asp Asn	1075	1080	1085

Arg Asn Ser Tyr Ala Leu Ala Ala Leu Gly Glu Ile Tyr Tyr Leu Gly
 1090 1095 1100
 Asn Glu Ser Ile Gly Ile Glu Arg Asp Glu Ile Lys Ala Phe Glu Phe
 1105 1110 1115 1120
 Trp Lys Lys Ala Ala Asp Gln Gly Asp Thr Thr Ser Ala Leu Ser Thr
 1125 1130 1135
 Gly Tyr Ala Tyr Leu Asp Glu Tyr Lys Lys Phe Leu Lys Lys Glu Glu
 1140 1145 1150
 Leu Val Lys Asn Met Asp Arg Glu Asp Ile Leu Thr Met Ile His Leu
 1155 1160 1165
 Glu Asn Ser Thr Lys Asp Lys Lys Asn Val Thr Leu Glu Met Phe Gln
 1170 1175 1180
 Glu Ser Ser Glu Lys Lys Asn Gln Lys Lys Lys Lys Lys Glu Lys Lys
 1185 1190 1195 1200
 Glu Gln Asp Gly Asn Thr Asp Gly Asp Arg Val Asp Asp Lys Ile Val
 1205 1210 1215
 Gln Asn Val Gly Asn Val Phe Gln Gln Ser Tyr Gly Asn Val Asp Glu
 1220 1225 1230
 Ser Met Gly Arg Asn Gly Ser Ile Asp Gly Phe Ser Met Pro Pro Ser
 1235 1240 1245
 Gly Gly Leu Asn Asn Val Ser Val Gln Asn Asn Ala Asn Ile Gln Asn
 1250 1255 1260
 Asn Ala Asn Ile Gln Asn Asn Ala Asn Ile Gln Ser Asn Ala Asn Ile
 1265 1270 1275 1280
 Gln Asn Asn Ala Asn Ile Gln Ser Asn Ala Asn Ile Gln Ser Asn Ala
 1285 1290 1295
 Asn Ile Gln Ser Asn Ala Asn Ile Gln Ser Asn Val Asn Ser His Gly
 1300 1305 1310
 Gly Thr Asn Arg Gln Asn Asn Ile Asn Asn Val Asn Phe Phe Glu Asn
 1315 1320 1325
 Asn Ala Tyr Thr Gln Gln Thr Ser Tyr Gly Gly Trp Ala Asn Pro Ser
 1330 1335 1340
 Glu Asp Val Phe Asn Asn Ser Phe Ser Ser Ser Val Pro Ser Ser Phe
 1345 1350 1355 1360
 Leu Phe Asp Ile Pro Glu Gly Ser Glu Tyr Glu His Met Thr Glu Asn
 1365 1370 1375
 Ile Leu Asp Glu Gln Met Asn Phe Phe Asn Thr Lys Asn Asn Lys Glu
 1380 1385 1390
 Gln Gln Glu Gly Gly Pro Asn Asn Glu Ser Asn Gly Met Trp Asn Asp
 1395 1400 1405
 Glu Asn Asp Glu Met Ile Lys Lys Tyr Met Lys Asp Leu Asn Asp Asp
 1410 1415 1420
 Leu Asn Lys Ser Leu Lys Asn Ala Glu Glu Tyr Phe His Lys Ala Ile
 1425 1430 1435 1440
 Arg Asn Asn Asp Asp Ser Leu Glu Asn Ile Leu Ala Lys Tyr Asn Ile
 1445 1450 1455

His Lys Phe Gly Leu Gly Thr Glu Lys Asn Ile Glu Leu Ala Gly Tle
 1460 1465 1470
 Tyr Leu Lys Lys Ala Ala Asp Lys Gly Asp Asn Ile Ser Gln Met Leu
 1475 1480 1485
 Leu Gly His Tyr Tyr Ser Gly Ser Asp Ile Gly Ile Lys Leu Asn Asp
 1490 1495 1500
 Tyr Lys Asp Asp Asp Lys Ile Glu Asn Leu Arg Lys Ser Tyr Lys Tyr
 1505 1510 1515 1520
 Tyr Lys Met Ser Ala Gln Asn Gly Asn Ile Ile Ser Leu Tyr Asn Lys
 1525 1530 1535
 Ser Ile Leu Ile Leu Lys Gly Val Asn Pro Lys Tyr Lys Thr Phe Asn
 1540 1545 1550
 Glu Lys Cys Glu Lys Thr Leu Lys His Phe His Phe Ile Gly Leu Phe
 1555 1560 1565
 Asn Glu Arg Leu Tyr Met Leu Thr Lys Leu Leu Arg Arg Asn Tyr Gln
 1570 1575 1580
 Phe Lys Asp Tyr Thr Gly Ser Leu Leu Leu Ser Ile Met Leu Ser Glu
 1585 1590 1595 1600
 Leu Gly Asp His Ala His Asn Val Asn Ala Ser Met Leu Trp Thr Leu
 1605 1610 1615
 Lys Arg Lys Thr Met Gln Gln Phe Thr Glu Lys Tyr Asn Ile Val Glu
 1620 1625 1630
 Asn Leu Lys Leu Ser Leu Ile Lys Glu Leu Lys Asn Lys Glu Glu Lys
 1635 1640 1645
 Glu Lys Glu Lys Arg Lys Asn Asn Ile His Asn Val Tyr Asn Asn Asn
 1650 1655 1660
 Asn Ser Asn Ile Asn Gly Tyr Lys Lys Cys Asp Lys Asn Cys Asn Asp
 1665 1670 1675 1680
 Asn Val Arg Lys Asn Gln Lys Asp Leu Asn Gln Ile Asp His Thr Ile
 1685 1690 1695
 Val Lys Gly Asp Thr Pro Tyr Tyr Tyr Glu Lys Asn Ile Asn Glu Lys
 1700 1705 1710
 Ile Lys Arg Ile Tyr Lys Lys Asn Lys Asn Ala Ser Tyr Ser Phe Ser
 1715 1720 1725
 Lys Val Arg Lys Met Tyr Ser Ile Ser Leu Leu Thr Asn Cys Ser Met
 1730 1735 1740
 Leu Ser Glu Phe Leu Arg Glu Arg Pro Leu Phe Ser Lys Ile Ile Tyr
 1745 1750 1755 1760
 Cys Tyr Asn Phe Lys Arg Glu Leu Tyr Ile Tyr Tyr Asn Arg Leu Ser
 1765 1770 1775
 Trp Phe Thr Tyr Gln Met Met Lys Met Gln His Glu Asp Asp Leu Ser
 1780 1785 1790
 Asp Asp Lys Asp Arg Ser Glu Gly Trp Asn Ser Ile Asn Ile Lys Lys
 1795 1800 1805
 Phe Asn Glu Asn Val Gln Arg Asp His Val Asn Arg Lys Glu Asn Val
 1810 1815 1820
 Asn Val Lys Ala Asn Ala Asn Val Lys Ala Asn Ala Asn Val Lys Glu

1825	1830	1835	1840
Asn Ala Asn Val Lys Glu Asn Ala Asn Val Lys Ala Asn Ala Asn Val	1845	1850	1855
Lys Ala Asn Ala Asn Val Lys Ala Asn Ala Asn Val Lys Glu Asn Ala	1860	1865	1870
Asn Val Lys Glu Asn Ala Asn Val Lys Glu Asn Ala Asn Val Lys Ala	1875	1880	1885
Asn Ala Asn Val Asn Asp Asn Ala Asn Ser Val Leu Asn Lys Asn His	1890	1895	1900
Asn Asn Asp Ile Tyr Asp Tyr Ser Tyr Tyr Lys Lys Asn Asp Glu Arg	1905	1910	1915
Arg Asn Asp Lys Lys Ser Glu Phe Phe Asn Thr Ser Lys Asn Lys Lys	1925	1930	1935
Glu Glu Lys Lys Glu Ile Lys Ile Thr Tyr His Asp Thr Tyr Asp Leu	1940	1945	1950
Cys Lys Lys Tyr Ser Gln Ile Glu Leu Tyr Glu Lys Tyr Asp Lys Ile	1955	1960	1965
Ile Leu Asn Thr Leu Lys Lys Asp Asp Asp Val Glu Glu Lys Ile Asn	1970	1975	1980
Lys Ile Glu Asn Met Lys Ser Val Ile Leu Glu His Leu Arg Ile Ser	1985	1990	1995
Glu Phe Leu His Cys Tyr Tyr Lys Pro Ile Ser Tyr Tyr Gln Ile Lys	2005	2010	2015
Leu Glu Glu Glu Lys Glu Lys Arg Ala Lys Ile Asp Glu His Ile Tyr	2020	2025	2030
Asn Glu Glu Arg Tyr Tyr Lys Asn Asp Lys Ser Asn Tyr Asn Ser Phe	2035	2040	2045
Tyr Ser Asn Lys Trp Lys Thr Met Lys Asp Tyr Asn Ile Lys Asn Leu	2050	2055	2060
Tyr Glu Ser Glu Phe Tyr Arg Tyr Ser Val Phe Leu Glu Asn Ile Asp	2065	2070	2075
Met Lys Glu Ile Phe Asn Tyr Lys Lys Lys Tyr Ser Ser Asn Ile Phe	2085	2090	2095
Asp Glu Ile Gln Ser Phe Ser Lys Asn Cys Glu Val Cys Lys Gln Tyr	2100	2105	2110
Tyr Asp Ile Tyr Ser Ala Tyr Tyr Gly His Lys Lys Ser Gly Ile Asn	2115	2120	2125
Leu Ile Lys Lys Tyr Arg Glu Gly Asp Glu Phe Thr Ile Lys Ser Lys	2130	2135	2140
Arg Lys Glu Leu Gln Phe Leu Ile Arg Asn Ser Asp Glu Asp Asn His	2145	2150	2155
Gln Ser Leu Tyr Tyr Lys Ala Leu Phe Leu Glu His Asn Asn Leu Asp	2165	2170	2175
Asn Leu Lys Asn Ile Leu Gln Ile Tyr Phe Lys Leu Ala Thr Asp Asp	2180	2185	2190
His Asn Thr Cys Asn Val Ile Gly Phe Leu Gly Ile Met Lys Ile Phe	2195	2200	2205

Phe Lys Lys Leu Phe Phe Asp Phe Asn Ile Phe Ser Lys Asn Asn Lys
 2210 2215 2220
 Lys Asn Ile Phe Thr Phe Pro Leu Lys His Lys Thr Phe Tyr Asp Asp
 2225 2230 2235 2240
 Asn Leu Cys Ser Leu Gln Lys Asn Ile Leu Leu Lys Ser Glu Phe Asp
 2245 2250 2255
 Asn Lys Cys Phe Asn Phe Asp Tyr Leu Leu Lys Asn Asn Tyr Ile Tyr
 2260 2265 2270
 Ser Gln Ile Arg Tyr Ser Asp Phe Phe Lys Val Leu Tyr Asn Leu Ile
 2275 2280 2285
 Leu Ser Phe Phe Lys Ile Ile
 2290 2295

<210> 38
 <211> 696
 <212> PRT
 <213> Plasmodium falciparum

<400> 38
 Met Asn Asp Val Asn Arg Lys Ala Phe Gln Asn Glu Met Ile Leu Lys
 1 5 10 15
 Ser Leu Leu Leu Asn Leu Glu Gly Ser His Thr Asn Asn Asn Val Lys
 20 25 30
 Lys Lys Ile Glu Gln Thr Asn Phe Glu Lys Cys Glu Lys Ala Ser Ile
 35 40 45
 Leu Leu Asp Asn Pro Ser Ile Phe Glu Asp Leu His Ile Ile Glu Asp
 50 55 60
 Asn Ile Tyr Pro Lys Met Lys Glu Gln Glu Lys Glu Leu Asn Leu Tyr
 65 70 75 80
 Asn Tyr Val Asn Thr Asp Tyr Thr Lys His Leu Asn Asp Lys Lys Asn
 85 90 95
 Tyr Asn Gln Cys Glu Lys Ile Phe Asp Leu Thr Lys Tyr Gln His Lys
 100 105 110
 Asn Met Lys Lys Lys Ile Ser Phe Asp Asn Asn Pro Lys Glu Ser Tyr
 115 120 125
 Ser Asp Asn Asn Asp Val Asn Leu Cys Tyr Lys Asn Leu Asn Ser Glu
 130 135 140
 Thr Gln Tyr Asn Asn Ile Tyr Val Asn Asn Leu Asn Arg Glu Asn Tyr
 145 150 155 160
 Thr Glu Thr Cys Glu Glu Tyr Phe Asn Asn Pro Ser Glu Glu Asp Ser
 165 170 175
 Leu Thr Cys Ser Gly Ile Leu Glu Lys Tyr Glu Gln Asp Arg Met Glu
 180 185 190
 Glu Ile His Met Lys Phe Glu Thr Asn Arg Met Tyr Ser Asn Tyr Ile
 195 200 205
 Lys Asn Glu His Asn Leu Asn Asp Val Lys Ser Gly Asn Asn Ile Val
 210 215 220
 Asn Tyr Glu Gln Lys Asp Asn Thr Tyr Ile Phe Asn Leu Ser Ser Gly
 225 230 235 240

Lys Asn Glu Met Asn Arg Lys Thr Lys Gln Lys Phe Tyr Leu Asp Asp
 245 250 255
 His Val Glu Leu Ala Lys Asn Lys Ile Lys Asn Lys Glu Glu Ala Phe
 260 265 270
 Val Tyr Lys Asn Glu Ile Gly Asn Asn Tyr Asn Glu Arg Asp Ile Lys
 275 280 285
 Thr Ser Leu Asn Asn Phe Ser Ile Lys Glu Lys Thr Leu Tyr Cys Met
 290 295 300
 Glu Asn Val Glu Glu Asn Asp Lys Arg Asn Lys Lys Asn Lys Arg Asn
 305 310 315 320
 Ile Lys Asn Lys Arg Asn Ile Lys Asn Tyr Leu Lys Asn Glu Leu Ile
 325 330 335
 Asn Ile His Lys Lys Gly Ser Lys Lys Asn Tyr Ile Asn Met Lys Glu
 340 345 350
 Phe Glu Asp Lys Ile Lys Glu Ile His Asn Glu Tyr Glu Leu Lys Tyr
 355 360 365
 Asp Asp Ile Ile Lys Gln Tyr Asp Glu Asp Asp Ile Arg Lys Lys Lys
 370 375 380
 Leu Ile Asp Asn Ile Tyr Met Lys Tyr Met Asn Met Lys Asn Glu Leu
 385 390 395 400
 Ile Lys Thr Gln Lys Glu Ile Ile Asn Ile Lys Glu Glu Asn Asn Lys
 405 410 415
 Leu Lys Glu Glu Leu Lys Ile Thr Pro Glu Arg Ile Ile Glu Ser Asn
 420 425 430
 Ile Val Asp Ser Tyr Lys Asn Lys Leu Glu Glu Tyr Ile Phe Leu Thr
 435 440 445
 Arg His Lys Asp Leu Lys Ile Lys Lys Leu Glu Glu Glu Leu Asn Lys
 450 455 460
 Glu Lys Lys Cys Ile Glu Glu Lys Glu Lys Arg Ile Ser Ala Ile Ser
 465 470 475 480
 Glu Gln Lys Asn Ser Leu His Lys Met Asn Ile Leu Leu Lys Lys Asp
 485 490 495
 Thr Met Asn Phe Glu Lys Lys Leu Glu Asn Leu Arg Lys Ile Asn Glu
 500 505 510
 Glu Leu Lys Gln Ile Ile Phe Tyr Lys Glu Ile Lys Ile Ser Tyr Phe
 515 520 525
 Ile Asn Ile Leu Asn Ile Ile Asp Glu Ala Ile Leu Asn Asp Asn Asn
 530 535 540
 Val Lys Asn Gly Lys Asn Lys Ile Lys Lys Asp Asn Gln Gln Lys Met
 545 550 555 560
 Glu Leu Asp Pro Ile Lys Asn Met Asn Lys Lys Ile Ile Ile Lys Ser
 565 570 575
 Ile Val His Lys Ile Lys Asp Ile Asn Lys Lys Met Glu Thr His Asn
 580 585 590
 Gln Met Leu Asn Thr Phe Glu Asn Arg Lys Asn Gln Ile Val His Lys
 595 600 605

Asn Gln Glu Ile Leu Lys Asn Gly Asp Asn Leu Ile Lys Asp Ile Lys
 610 615 620
 Lys Lys Asn Gln Ser Glu Leu Leu Asp Asn Tyr Phe Asp Ser Thr Gly
 625 630 635 640
 Phe Ser Leu Asn Glu Lys Glu Cys Thr Leu Asp Lys Glu Asn Lys Glu
 645 650 655
 Leu Lys Thr Phe Phe Ser Asn Val Asp Leu Asp Glu Tyr Gln Glu Ile
 660 665 670
 Asp Leu Phe Lys Ser Glu Ile Lys Lys Glu Ile Gln Val Lys Glu Asn
 675 680 685
 Ile Glu Glu Leu Ser Asn Lys Gly
 690 695

<210> 39
 <211> 405
 <212> PRT
 <213> Plasmodium falciparum

<400> 39
 Met Asp Lys Leu Leu Ser Ser Leu Glu Asn Ile Glu Val Asp Asn Ile
 1 5 10 15
 Leu Lys Thr Ala Arg Glu Phe Lys Glu Asp Thr Cys Glu Glu Lys Ile
 20 25 30
 Asn Leu Ser Ile Gly Val Cys Cys Asn Asp Asp Gly Asp Leu His Ile
 35 40 45
 Phe Asp Ser Val Leu Asn Ala Asp Lys Leu Val Thr Glu Asn Tyr Lys
 50 55 60
 Glu Lys Pro Tyr Leu Leu Gly Asn Gly Thr Glu Asp Phe Ser Thr Leu
 65 70 75 80
 Thr Gln Asn Leu Ile Phe Gly Asn Asn Ser Lys Tyr Ile Glu Asp Lys
 85 90 95
 Lys Ile Cys Thr Ile Gln Cys Ile Gly Gly Thr Gly Ala Ile Phe Val
 100 105 110
 Leu Leu Glu Phe Leu Lys Met Leu Asn Val Glu Thr Leu Tyr Val Thr
 115 120 125
 Asn Pro Pro Tyr Ile Asn His Val Asn Met Ile Glu Ser Arg Gly Phe
 130 135 140
 Asn Leu Lys Tyr Ile Asn Phe Phe Asp Tyr Asn Leu Ile Asp Ile Asn
 145 150 155 160
 Tyr Asp Leu Phe Leu Asn Asp Leu Arg Asn Ile Pro Asn Gly Ser Ser
 165 170 175
 Val Ile Leu Gln Ile Ser Cys Tyr Asn Pro Cys Ser Val Asn Ile Glu
 180 185 190
 Glu Lys Tyr Phe Asp Glu Ile Ile Glu Ile Val Leu His Lys Lys His
 195 200 205
 Val Ile Ile Phe Asp Ile Ala Tyr Gln Gly Phe Gly His Thr Asn Leu
 210 215 220
 Glu Glu Asp Val Leu Leu Ile Arg Lys Phe Glu Glu Lys Asn Ile Ala
 225 230 235 240

Phe Ser Val Cys Gln Ser Phe Ser Lys Asn Met Ser Leu Tyr Gly^{Pro} Glu^{Pro}
 245 250 255
 Arg Ala Gly Ala Leu His Ile Val Cys Lys Asn Gln Glu Glu Lys Lys
 260 265 270
 Ile Val Phe Asn Asn Leu Cys Phe Ile Val Arg Lys Phe Tyr Ser Ser
 275 280 285
 Pro Val Ile His Thr Asn Arg Ile Leu Cys Gln Leu Leu Asn Asn Gln
 290 295 300
 Asn Leu Lys Leu Asn Trp Ile Lys Glu Leu Ser Gln Leu Ser Gln Arg
 305 310 315 320
 Ile Thr Asn Asn Arg Ile Leu Phe Phe Asn Lys Leu Glu Thr Tyr Gln
 325 330 335
 Lys Lys Tyr Asn Leu Asn Tyr Asp Trp Asn Val Tyr Lys Lys Gln Arg
 340 345 350
 Gly Leu Phe Ser Phe Val Pro Leu Leu Ala Lys Ile Ala Glu His Leu
 355 360 365
 Lys Thr His His Ile Tyr Ile Ile Asn Asn Gly Arg Ile Asn Val Ser
 370 375 380
 Gly Ile Thr Lys Asn Asn Val Asp Tyr Ile Ala Asp Lys Ile Cys Leu
 385 390 395 400
 Ser Leu Ser Gln Ile
 405

<210> 40
 <211> 1188
 <212> PRT
 <213> Plasmodium falciparum

<400> 40
 Met Pro Lys Arg Thr Ile Tyr Met Trp Leu Val Phe Leu Phe Phe Phe
 1 5 10 15
 Leu Glu Leu Ala Lys Cys Gly Ile Pro Gly Leu His Lys Trp Val Ile
 20 25 30
 Asn Asn Phe Pro Ser Cys Val Lys Ile Val Asp Arg Asn Lys Leu Ile
 35 40 45
 Asp Trp Asn Cys Ile Gly Lys Leu Glu Lys Ala Lys Gly Lys His Lys
 50 55 60
 Arg Asn His Asn Gly Gly Asp Asn Asn Gly Asp Asn Asn Gly Asp Asn
 65 70 75 80
 Asn Tyr Asp Asp Asn Tyr Asp Asp Asn Asn Tyr Asn Asp Gly Cys Glu
 85 90 95
 Ile Asn Arg Asn Ile Lys Asn Lys Asp Asn Thr Tyr Asp Asn Asn Ile
 100 105 110
 Asn Asn Thr Tyr Asn Lys Tyr Asp Ile Asp Asp Asp Lys Lys Lys Ser
 115 120 125
 Phe Cys Lys Gly Lys Lys Tyr Lys Glu Glu Lys Ile Phe Glu Val Asp
 130 135 140
 Asn Leu Leu Phe Asp Leu Asn Gln Leu Leu His Lys Ala Asn Val Lys
 145 150 155 160

Phe Ile Asn Tyr Asp Asn Tyr Phe Leu Lys Leu Thr Arg Leu Ile Lys
 165 170 175
 Asn Val Leu Lys Lys Phe Glu Pro Lys Lys Asn Val Val Phe Ala Ile
 180 185 190
 Asp Gly Ile Cys Pro Phe Ser Lys Leu Lys Leu Gln Ile Lys Arg Arg
 195 200 205
 Ala Lys Ser Lys Leu Lys Asn Lys Glu Asn His Leu Val Asn Asp Ile
 210 215 220
 Thr Cys Gly Ser Ile Phe Ile Asn Lys Ile Ser Lys Phe Leu Val Asn
 225 230 235 240
 Phe Leu Lys His Leu Leu Ser Phe Glu Lys Tyr Glu His Val Lys Phe
 245 250 255
 Phe Ile Ser Thr Asp Gln Glu Val Gly Glu Gly Glu Leu Lys Leu Met
 260 265 270
 Asn Trp Ile Ser Asn Tyr Val Lys Asn Ile Lys Asn Ile Lys Asn Ile
 275 280 285
 Lys Ile Asn Lys Asn Ile Gln Ile Lys Glu Asp Glu Lys Ile Asn Asn
 290 295 300
 Met Ile Glu Ile Lys Lys Glu Asn Ile Met Asn His Leu His Tyr Lys
 305 310 315 320
 Gln Glu Met Phe Asn Asp Ile Lys Asn Asp Asn Leu Lys Tyr Glu Glu
 325 330 335
 Lys Lys Lys Ile Arg Thr Asn Asn Lys Met Asn Asn Ser Thr Asn Tyr
 340 345 350
 Asp Ile Thr Asn Val Glu Glu Glu Ser Phe Val Ile Val Gly Ala Asp
 355 360 365
 Ala Asp Leu Leu Leu Gln Cys Leu Ser Leu Lys Asn Val His Asn Ile
 370 375 380
 Phe Ile Tyr Thr Tyr Gln Ile Phe Asn Val Glu Ile Asn Asp Asn Asn
 385 390 395 400
 Met Lys Lys Glu Asn Tyr Leu Met Lys Asn Lys Val Ile Lys Gly Asp
 405 410 415
 Pro Ile Phe Lys Glu Asp Lys Asn Asn Val Cys Lys Met Asn Gly Ala
 420 425 430
 Tyr Lys Lys Tyr Glu Asp Asp Ile Asp Ser Asp Asn Ile Gln Lys Asp
 435 440 445
 Ile Thr Arg Trp Ser Asn His Asn Asp Asn Ile Asn Tyr Asn Asn Asp
 450 455 460
 Asn Ile Asn Tyr Asn Asn Asp Asn Ile Asn Tyr Asn Asn Asp Asn Ile
 465 470 475 480
 Asn Tyr Asn Asn Asp Asn Ile Asn His Asn Asn Asp Asn Ile Asn Tyr
 485 490 495
 Asn Asn Asp Asn Ile Asn His Asn Asn Asp Asn Ile Asn Tyr Asn Asn
 500 505 510
 Asp Asn Ile Asn Tyr Asn Asn Asp Asn Ile Asn Tyr Asn Asn Ile Cys
 515 520 525
 Pro Thr Gly Asp Lys Asn His Ile Glu Lys Ile Leu Leu Lys Thr Gln

530					535					540									
Ser	Thr	Asn	Val	Gln	Asn	Val	Lys	Lys	Lys	Lys	Ile	Lys	Val	Leu	Tyr	545	550	555	560
Asn	Leu	Lys	Thr	Phe	Ile	Asn	Leu	Phe	Leu	Asn	Lys	Tyr	Pro	Lys	Trp	565	570	575	
Phe	His	Lys	Ile	Lys	Ala	Asp	Leu	Leu	Ile	Leu	Phe	Ile	Leu	Lys	Gly	580	585	590	
Asn	Asp	Tyr	Leu	Pro	Lys	Ile	Arg	Glu	Gly	Asn	Phe	Gly	Ile	Phe	Phe	595	600	605	
Glu	Ala	Tyr	Phe	Lys	Met	Leu	Glu	Asn	Ile	Lys	Asn	Arg	Asn	Asn	Cys	610	615	620	
Glu	Glu	Lys	Lys	Lys	Thr	Asp	Asp	Phe	Glu	Ile	Asn	Lys	Tyr	Asp	Asp	625	630	635	640
Leu	Gly	Glu	Arg	Glu	Tyr	Ser	Tyr	Asn	Asn	Thr	Tyr	Glu	Gly	Leu	Leu	645	650	655	
Asp	Gly	Asn	Asn	Tyr	Lys	Ile	Asn	Lys	Lys	Glu	Phe	Leu	Leu	Phe	Leu	660	665	670	
Asn	Glu	Val	Gln	Lys	Leu	Val	His	Phe	Thr	Asn	Ile	Tyr	Asn	Asn	Asn	675	680	685	
Asn	Ile	Arg	His	Tyr	His	Asn	Ser	Asn	Asp	Ile	Arg	Phe	Phe	Lys	Asn	690	695	700	
Asp	Lys	Lys	Met	Tyr	Met	Lys	Gln	Thr	Asn	Ser	Cys	Ser	Pro	Leu	Leu	705	710	715	720
Leu	Ile	Asn	Glu	Leu	Ile	Ser	Lys	Lys	Ile	Leu	Asp	Lys	Asp	Thr	Phe	725	730	735	
Thr	Ile	Asn	Val	Thr	Lys	Asn	Glu	Asn	Asp	Met	Phe	Gln	Cys	Asn	Leu	740	745	750	
Ile	Tyr	Phe	Lys	Asn	His	Lys	Arg	Tyr	Val	Tyr	Ser	Ser	Lys	Ser	Lys	755	760	765	
Lys	Lys	Lys	Asn	Ala	Met	His	Ile	Thr	Ser	Tyr	Asp	Phe	Leu	Asn	Glu	770	775	780	
His	Phe	Pro	His	Leu	Met	Lys	Tyr	Ile	Asp	Lys	Glu	Tyr	Phe	Glu	Lys	785	790	795	800
Asn	Met	Lys	Gln	Ser	Asp	Asn	Asn	Val	Glu	Ile	Leu	Asn	Asn	Asn	Glu	805	810	815	
Leu	Asn	Thr	Asn	Gln	Ile	Gln	His	Ile	Gln	Lys	Gly	Asp	Asn	Asn	Lys	820	825	830	
Cys	Asp	Asp	Val	Pro	Ile	Leu	Lys	Asn	Asn	Val	Lys	Cys	Tyr	Asn	Glu	835	840	845	
Tyr	Tyr	Asn	Asn	Ile	Gly	Gly	Asn	Asp	Lys	Val	Lys	Asn	Ser	Ile	His	850	855	860	
Met	Glu	Asn	Tyr	Ile	Lys	Asn	Phe	Tyr	Leu	Gln	His	Cys	Gln	Asp	Glu	865	870	875	880
Lys	Ile	Tyr	Lys	Glu	Glu	Met	Asp	Ile	Val	Glu	Asn	Tyr	Ile	Glu	Gly	885	890	895	
Ile	His	Trp	Leu	Val	Glu	Met	Tyr	Asn	Lys	Thr	Tyr	Cys	Ile	Asn	Phe	900	905	910	

Asn Phe Phe Tyr Lys Tyr Met Ser Ser Pro Ser Leu Leu Ser Leu Tyr
 915 920 925
 Tyr Tyr Leu Leu Ile Asn Arg Asp Asp Ile Tyr Asn Asn Met Lys Ser
 930 935 940
 Met Asp Tyr Cys Asn Asn Tyr Lys Asn Asn Tyr Met Glu Ile Ile Gln
 945 950 955 960
 Lys Ile Asn Leu Asn Ile Phe Arg Ser Asn Leu Glu Tyr Tyr Asp Phe
 965 970 975
 Ile Asn Phe Cys Val Asp Lys Tyr Asn Ser Leu Lys Arg Asn Ile Thr
 980 985 990
 Lys Ile Gly Thr Cys Arg Asn Lys Asp Thr Ser Tyr Asn Asp Glu Glu
 995 1000 1005
 Lys Ile Ile His Thr Asp Asp Lys Arg Tyr Asp Lys Arg Phe Ile Tyr
 1010 1015 1020
 Phe Lys Asn Ile Tyr Asn Ile Leu Phe Ser Asn Asn Ile Ile Ile Ile
 1025 1030 1035 1040
 Arg Asp Ser Ile Gln Lys Leu Asn Asp Val Leu Lys Ser Gln Val Tyr
 1045 1050 1055
 Asn Lys Arg Met Ile Asn Tyr Tyr Trp Asn Val Tyr Thr Lys Lys Pro
 1060 1065 1070
 Leu Lys Lys Phe Tyr Lys Ile Ile Phe Phe Lys Ala Gly Lys Met Phe
 1075 1080 1085
 Val Ser Lys Phe Ser Leu Phe Asn Leu His Ile Glu Gln Leu Lys Lys
 1090 1095 1100
 Lys Glu Asn Asn Gln Asn Tyr Ser His Asp Thr Asn Glu Glu Leu Cys
 1105 1110 1115 1120
 His Gln Lys Gly Gln Arg Asn Glu Glu Asp Asn Thr Tyr Asn Lys Met
 1125 1130 1135
 Ala Ile Arg Asn Asn Phe Leu His Ser Ile Phe Asn Asn Asn Lys Cys
 1140 1145 1150
 Ile Lys Thr Asn Arg Lys Phe Thr Thr Asn Ser Leu Arg Ser Val Asp
 1155 1160 1165
 Gly Lys Thr Lys Val Leu Lys Gly Val Phe Lys Arg Lys Ser Val Arg
 1170 1175 1180
 Trp Gln Tyr His
 1185

<210> 41

<211> 504

<212> PRT

<213> Plasmodium falciparum

<400> 41

Met Thr Lys Ser Ser Lys Asp Ile Cys Ser Glu Asn Glu Gly Lys Lys
 1 5 10 15

Asn Gly Lys Ser Gly Phe Phe Ser Thr Ser Phe Lys Tyr Val Leu Ser
 20 25 30

Ala Cys Ile Ala Ser Phe Ile Phe Gly Tyr Gln Val Ser Val Leu Asn
 35 40 45

Thr Ile Lys Asn Phe Ile Val Val Glu Phe Glu Trp Cys Lys Gly Glu
 50 55 60
 Lys Asp Arg Leu Asn Cys Ser Asn Asn Thr Ile Gln Ser Ser Phe Leu
 65 70 75 80
 Leu Ala Ser Val Phe Ile Gly Ala Val Leu Gly Cys Gly Phe Ser Gly
 85 90 95
 Tyr Leu Val Gln Phe Gly Arg Arg Leu Ser Leu Leu Ile Ile Tyr Asn
 100 105 110
 Phe Phe Phe Leu Val Ser Ile Leu Thr Ser Ile Thr His His Phe His
 115 120 125
 Thr Ile Leu Phe Ala Arg Leu Leu Ser Gly Phe Gly Ile Gly Leu Val
 130 135 140
 Thr Val Ser Val Pro Met Tyr Ile Ser Glu Met Thr His Lys Asp Lys
 145 150 155 160
 Lys Gly Ala Tyr Gly Val Met His Gln Leu Phe Ile Thr Phe Gly Ile
 165 170 175
 Phe Val Ala Val Met Leu Gly Leu Ala Met Gly Glu Gly Pro Lys Ala
 180 185 190
 Asp Ser Thr Glu Pro Leu Thr Ser Phe Ala Lys Leu Trp Trp Arg Leu
 195 200 205
 Met Phe Leu Phe Pro Ser Val Ile Ser Leu Ile Gly Ile Leu Ala Leu
 210 215 220
 Val Val Phe Phe Lys Glu Glu Thr Pro Tyr Phe Leu Phe Glu Lys Gly
 225 230 235 240
 Arg Ile Glu Glu Ser Lys Asn Ile Leu Lys Lys Ile Tyr Glu Thr Asp
 245 250 255
 Asn Val Asp Glu Pro Leu Asn Ala Ile Lys Glu Ala Val Glu Gln Asn
 260 265 270
 Glu Ser Ala Lys Lys Asn Ser Leu Ser Leu Leu Ser Ala Leu Lys Ile
 275 280 285
 Pro Ser Tyr Arg Tyr Val Ile Ile Leu Gly Cys Leu Leu Ser Gly Leu
 290 295 300
 Gln Gln Phe Thr Gly Ile Asn Val Leu Val Ser Asn Ser Asn Glu Leu
 305 310 315 320
 Tyr Lys Glu Phe Leu Asp Ser His Leu Ile Thr Ile Leu Ser Val Val
 325 330 335
 Met Thr Ala Val Asn Phe Leu Met Thr Phe Pro Ala Ile Tyr Ile Val
 340 345 350
 Glu Lys Leu Gly Arg Lys Thr Leu Leu Leu Trp Gly Cys Val Gly Val
 355 360 365
 Leu Val Ala Tyr Leu Pro Thr Ala Ile Ala Asn Glu Ile Asn Arg Asn
 370 375 380
 Ser Asn Phe Val Lys Ile Leu Ser Ile Val Ala Thr Phe Val Met Ile
 385 390 395 400
 Ile Ser Phe Ala Val Ser Tyr Gly Pro Val Leu Trp Ile Tyr Leu His
 405 410 415

Glu Met Phe Pro Ser Glu Ile Lys Asp Ser Ala Ala Ser Leu Ala Ser
 420 425 430
 Leu Val Asn Trp Val Cys Ala Ile Ile Val Val Phe Pro Ser Asp Ile
 435 440 445
 Ile Ile Lys Lys Ser Pro Ser Ile Leu Phe Ile Val Phe Ser Val Met
 450 455 460
 Ser Ile Leu Thr Phe Phe Phe Ile Phe Phe Phe Ile Lys Glu Thr Lys
 465 470 475 480
 Gly Gly Glu Ile Gly Thr Ser Pro Tyr Ile Thr Met Glu Glu Arg Gln
 485 490 495
 Lys His Met Thr Lys Ser Val Val
 500

<210> 42
 <211> 416
 <212> PRT
 <213> Plasmodium falciparum

<400> 42
 Met Ile Lys Cys Leu Lys Asn Asn Ile Asn Ile Trp Lys Arg Val Arg
 1 5 10 15
 Arg Asn Val Ser Tyr Gly Tyr Tyr Asn Ile Asn Ile Asn Glu Lys Ile
 20 25 30
 His Lys Tyr Phe Asp Asn Ile Asp Lys Lys Arg Asn Ile Lys Tyr Ile
 35 40 45
 Ser Asp Cys Lys Ser Cys Lys Glu Cys Val Asp Glu Ile Lys Asn Gly
 50 55 60
 Asn Tyr Asn Leu Leu Lys Asp Phe Asn Met Lys Met Ile Gly Leu Asp
 65 70 75 80
 Ile Glu Gly Tyr Lys Ile Gly Lys Tyr Gly Ile Val Ser Ile Ile Gln
 85 90 95
 Ile Cys Tyr Glu Asp Ile Tyr Ile Phe Asp Ile Tyr Lys Cys Asp Asn
 100 105 110
 Val Tyr Leu Phe Ile Asn Tyr Ile Lys Asp Ile Leu Glu Cys Asp Asp
 115 120 125
 Ile Ile Lys Val Thr His Asp Cys Arg Glu Asp Cys Ser Ile Leu Tyr
 130 135 140
 Asn Gln Tyr Asn Ile His Leu Lys Asn Ile Leu Asp Thr Gln Val Ala
 145 150 155 160
 Tyr Asn Leu Leu Leu Lys Asn Asn Asn Asn Tyr Thr Asn Thr Tyr Gln
 165 170 175
 Ile Ser Tyr Asp Asp Leu Leu Lys Lys Tyr Leu Phe Ile Asn Asn Asn
 180 185 190
 His Lys Ile Tyr Phe His Lys Met Ile Thr Leu Asp Asn Tyr Ile Tyr
 195 200 205
 Leu Lys Arg Pro Ile Met Lys Glu Leu Ile Ser Tyr Ala Ile Gln Asp
 210 215 220
 Val Ile Tyr Leu Lys Pro Leu Ile Leu Cys Ile Leu Asp Lys Phe Ile
 225 230 235 240

Ile Lys Gln Lys Lys Lys Glu Glu Gln Glu Lys Asn Lys Tyr Val Asn
 245 250 255
 Asp Lys Gln Asn Asn Lys Ile Lys Gln Glu Lys Phe Asp Lys Thr Ser
 260 265 270
 Asn Thr Leu Gln Ser Lys Gly Asn Ile Ser Ser Phe Asn Asn Gln Asp
 275 280 285
 Leu Tyr His Thr Lys Glu Ile Ile Gln Asp Ile Ile Leu His Ser Lys
 290 295 300
 Lys Tyr Val Asn Tyr Gln Phe Leu Asn Ser His Ile Lys Asp Glu Lys
 305 310 315 320
 Glu Leu Gln Lys Gly Met Ile Leu Glu Gly Met Val Val Ser Cys Asn
 325 330 335
 Asn Thr Lys Met Tyr Leu Lys Leu Asn Met Arg Lys Arg Gly Val Ile
 340 345 350
 Leu Asn Tyr Val Gln Asn Lys Tyr Glu Ile Gly Asp Ile Val Lys Ala
 355 360 365
 Val Ile Val Asn Phe Thr Arg Asn Asp Tyr Ile Asn Leu Gly Leu Tyr
 370 375 380
 Asp Glu Lys Ile Leu Thr Leu Asp Ala Gln Lys Tyr Ile Pro Arg Glu
 385 390 395 400
 Glu Val Leu Gln Asn Ile Gln Lys Phe Leu Leu Asn Glu Glu Lys Ile
 405 410 415

<210> 43
 <211> 354
 <212> PRT
 <213> Plasmodium falciparum

<400> 43
 Met Lys Ile Thr Lys Ile Ile Asn Tyr Asn Asn Phe Lys Ile Thr Asn
 1 5 10 15
 Val Trp Gly Gly Ile Ile Ser Lys Ala Ser His Phe Ser Thr Gln His
 20 25 30
 Gly Gln Tyr Asp Lys Ser Glu Arg Ile Cys Asn Phe Gly Phe Gln Lys
 35 40 45
 Val Ser Glu Glu Ile Lys Ser Arg Leu Val Tyr Asn Leu Phe Ser Asn
 50 55 60
 Val Cys Asn Lys Tyr Asp Ile Met Asn Asp Met Met Ser Leu Leu Val
 65 70 75 80
 His Arg Phe Trp Lys Asp Gln Phe Val Lys Glu Leu Asp Ile Leu Leu
 85 90 95
 Lys Tyr His Ser Tyr Asn Ile Gln Asp Tyr Val Tyr Gln His Tyr Lys
 100 105 110
 Asp His Ser Ser Asn Asn Glu Lys Ile Gln Lys Lys Asn Glu Asn Thr
 115 120 125
 Ser Asp Thr Asn Gly Tyr Ser Asn Asn Tyr Ser Val Tyr Ser Asp Ile
 130 135 140

Pro Asn Tyr Lys Ile Leu Asp Leu Ala Gly Gly Thr Gly Asp Ile Ala
 145 150 155 160
 Phe Arg Ile Leu Glu Lys Ser Lys Phe Tyr Leu Lys Lys Asn Asn Gln
 165 170 175
 Ser Ile Pro Phe Asp His Ile Ser Tyr Gln Gln Tyr Leu Pro His Ile
 180 185 190
 Ile Val Cys Asp Val Asn Asn Asp Met Leu Asn Val Gly Lys Lys Lys
 195 200 205
 Ala Ala Thr Leu Gly Tyr Asp Gln Asn Leu Thr Trp Leu Val Gln Asn
 210 215 220
 Ala Glu Asn Leu Glu Ser Val Glu Ser Asn Ser Ile Asp Val Ile Thr
 225 230 235 240
 Leu Ser Phe Gly Ile Arg Asn Phe Thr Asn Ile Pro Gln Ala Leu Lys
 245 250 255
 Glu Ile His Arg Val Leu Lys Pro Gly Gly Arg Phe Leu Cys Leu Glu
 260 265 270
 Phe Ser Lys Val Gln Cys His Ile Phe Asn Ile Phe Tyr Lys Phe Tyr
 275 280 285
 Leu Asn Asn Val Ile Pro Ile Ile Gly Lys Val Val Ala Asn Asp Met
 290 295 300
 Lys Ala Tyr Lys Tyr Leu Ala Glu Ser Ile Gln Thr Phe Leu Thr Pro
 305 310 315 320
 Asp Glu Leu Ala Gln Leu Phe His Gln Ala Asn Phe Lys Asn Ile Thr
 325 330 335
 Tyr Thr Thr Met Thr Met Gly Ile Val Ser Ile His Ser Ala Tyr Lys
 340 345 350
 Leu Val

<210> 44
 <211> 508
 <212> PRT
 <213> Plasmodium falciparum

<400> 44
 Met Gly Leu Pro Lys Asn Asn Lys Val Asn Phe Cys Tyr Gly Lys Asp
 1 5 10 15
 Tyr Arg His Ile Ser Arg Glu Leu Glu Arg Ile Asn Asn Ile Ile Leu
 20 25 30
 Lys Tyr Ser Lys Asn Ile Glu Thr Cys Asn Lys Asn Lys Lys Lys Cys
 35 40 45
 Leu Asp Glu Leu Tyr Ile Leu Ala Ser Tyr Asp Asn Phe Leu Lys Lys
 50 55 60
 Lys Tyr Glu Thr Tyr Glu Cys Lys Leu Asp Gly Tyr Ile Asn Glu Asp
 65 70 75 80
 Lys Glu Lys Ile Lys Ile Asn Glu Val Asn Lys Gly Arg Asn Lys Lys
 85 90 95
 Ile Asp Cys Thr Pro Asn Asn Asn Lys Ile Phe Phe Tyr Asn Val His
 100 105 110

Leu Ile Asn Asp Asp Asp Leu Phe Lys Arg Arg Lys Asn Lys Lys Lys
 115 120 125
 Lys Lys Lys Met Ile Thr Leu Lys Ile Asn Lys Cys Asn His Lys Asp
 130 135 140
 Lys Asn Leu His Lys Asn Glu Met Lys Asp Gly Asp His Val Phe Ser
 145 150 155 160
 Tyr Thr Lys Lys Lys Trp Leu Asn Asn Asn Asn Asn Asn Asn Ile
 165 170 175
 Thr Asn Met Val Ser Phe Leu Gly Tyr Gly Asn Ile Lys Arg Lys Tyr
 180 185 190
 Val Thr Asn Lys Cys Ile Ile Asn Glu Gln Glu Asn Asn Lys Met Asp
 195 200 205
 Glu Asn Gln His Ile Asp Lys Asn Lys Asn Ile Asn Ile Asn Ile Asn
 210 215 220
 Leu His Asp Asp Lys Asn Asp Glu Ile Arg Lys His Ser Thr Ile Gln
 225 230 235 240
 Thr Leu Tyr His Ser Asn Asn Lys Glu Lys Ile Ile Ser Lys Asn Val
 245 250 255
 Leu Lys Asp Glu Ser Thr Asn Ile Thr Lys Glu Cys Asn Val Asn Lys
 260 265 270
 Tyr Asp Asp Asn Ile Ile Asp His Lys Gln Lys His Arg Glu Lys Glu
 275 280 285
 Lys Lys Lys Ser Ile Glu Asn Met Asn Ile Ser His Ile Ile Tyr Glu
 290 295 300
 Lys Glu Gln Ser His Asp Ile Cys Asn Val Leu Glu Glu Asn Lys Glu
 305 310 315 320
 Glu Glu Lys Tyr Asn Asn Leu Gln Lys Asp Val Ile Thr Asn Cys Asn
 325 330 335
 Asn Asp Lys Val Lys Leu Glu Glu Tyr His His Glu Lys Glu Leu Asn
 340 345 350
 Asn Val Gln Ile Ile Asn Asp Met Asp Ile Lys Lys Asn Glu Ala Lys
 355 360 365
 Lys Glu Lys Asn Asn Lys Lys Lys Glu Lys Gln Lys Asn Lys Lys Asn
 370 375 380
 Glu Lys Glu Lys Asn Lys Lys Lys Glu Lys Glu Lys Asn Lys Lys Lys
 385 390 395 400
 Glu Lys Glu Lys Asn Lys Lys Lys Glu Lys Glu Lys Ser Lys Lys Lys
 405 410 415
 Glu Lys Glu Lys Asn Lys Lys Lys Glu Lys Glu Lys Asn Lys Lys Lys
 420 425 430
 Glu Lys Glu Lys Asn Asn Gly Asp Val Leu Lys His Val Glu Asn Asn
 435 440 445
 Leu Gln Asp Val Glu Leu Leu Tyr Glu Glu Lys Ile Ile Asn Val Asn
 450 455 460
 Thr Lys Lys Asp Glu Glu Leu Ser Thr Lys Asn Lys Tyr Ser Glu Lys
 465 470 475 480
 Asp Ile Val His Asp Ile Leu Ser Glu Tyr Ser Asn Thr Leu Gln Tyr

485

490

495

Thr Ser Phe Leu Asp Tyr Met Lys Asn Arg Met Glu
500 505

<210> 45

<211> 646

<212> PRT

<213> Plasmodium falciparum

<400> 45

Met Ser Thr Ile Leu Asn Phe Val Lys Glu Gln Asn Lys Met Asn Thr
1 5 10 15

Leu His Ile Lys Asn Phe Ile Met Glu Asn Leu Lys Val Thr Glu Glu
20 25 30

Ile Lys His Asp Lys Asp Ile Asn Asn Leu Met Arg Arg Ile Glu His
35 40 45

Glu Glu Ile Lys Glu Leu Ile Ser Ser Asn Gly Lys Arg Tyr Phe Met
50 55 60

Glu Ile Arg Lys Ile Tyr Phe Leu Met Lys Lys Phe His Lys Glu Gly
65 70 75 80

Tyr Phe Pro Ser Ser Asn Lys Asp Val Leu Lys Lys Gln Ser Phe Lys
85 90 95

Arg Asn Lys Asn Ile Lys Asn Leu Leu Gln Glu Ser Ile Lys Lys Lys
100 105 110

Asn Ile Gln Ile Gln Lys Leu Leu Lys Gln Tyr Ile Ile Leu Lys Gly
115 120 125

Tyr Tyr Lys Asn Val Cys Lys Lys Tyr Arg Gln Glu Asn Glu Leu Leu
130 135 140

Lys Ser Phe Phe Ser Phe Ser Asn Asn Gln Ser Tyr Tyr Leu Asn Leu
145 150 155 160

Lys Tyr Ser Pro Pro His Ser Arg Arg Asn Arg Ile Tyr Phe Tyr Pro
165 170 175

Tyr Thr Lys Leu Leu Arg Arg Lys Arg Leu Arg Arg Ile Ser His Phe
180 185 190

Lys Glu Asp Arg Tyr Val Ile His Lys Gly Pro Leu Thr Lys Lys Lys
195 200 205

Lys Lys Lys Ile Tyr Ile Asn Lys Lys Tyr Ile Tyr Ile Ile Tyr Ile
210 215 220

Tyr Ile Tyr Ile Tyr Tyr Ile Phe Phe Met Phe Tyr Ser Phe Ile Phe
225 230 235 240

Ile Glu Tyr Phe Ser Asn Ser Ile Phe Arg Lys Tyr Thr His His Lys
245 250 255

Lys Arg Tyr Lys Glu Ile Ile Gln Asp Ile Leu Asn Asp Asn Lys Leu
260 265 270

Leu Asn Leu His Phe Lys Arg Tyr Lys Glu Lys Tyr Lys Lys Lys Lys
275 280 285

Lys Lys Lys Leu His Ile Ser Ser Lys Arg Lys Lys Asp Lys Arg Asn
290 295 300

Leu Asp Leu Tyr Cys Lys Lys Lys Lys Glu Ile Ile Tyr Thr His

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<210> 46
<211> 483
<212> PRT
<213> Plasmodium falciparum
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<400> 46
Met Glu Lys Lys Ile Asp Tyr Asn Ile Lys Arg Asp Asn Leu Phe Arg
1 5 10 15
Thr Asn Asn Val Asp Lys Lys Lys Gly Glu Glu Lys Lys Lys Asp Leu
20 25 30
Ile Ser Lys Lys Asn Lys Asn Lys Asp Asn Ser Pro Asn Asn Asn Asn
35 40 45
Lys Asn Asn Asp Lys Asn Asn Ile Lys Asn Asn Val Leu Lys Asn Asn
50 55 60
Ser Leu Phe Asn Asn Lys Lys Lys Lys His Tyr Leu Tyr Asp Val Asp
65 70 75 80
Lys Thr Leu Leu Asn Lys Asp Met Asn Cys Ile Asn Tyr Thr Tyr Lys
85 90 95
Asn Leu Asn Glu Gln Lys Gln Asn Ser Pro Asn Thr Ile Asn Val Asn
100 105 110
Ile Asn Asp Lys Asp Cys Asp Asp Asn Gln Lys Ile Met Asp Ile Phe
115 120 125
Ser Ile Glu Lys Lys Ile Lys Asn Lys Tyr Ile Pro Asn Lys Asn His
130 135 140
Met Asn Lys Tyr Asn Asn Asn Asn Asp Gln Asn Lys Ser Asp Asp Asn
145 150 155 160
Phe Val His Ser Ile Ile His Asp Thr Phe Leu Asn Thr Ser Leu Gln
165 170 175
Thr Thr His Lys Asn Thr Leu Thr Ser Ile Lys Ile Asn Lys Gly Val
180 185 190
Lys Lys Lys Thr Phe Thr His Lys Asp Lys Lys Tyr Tyr Asn Asp Asp
195 200 205
Asn Ile Lys Thr Lys Glu Asn Lys Lys Asn Lys Ile Asn Asn Asn Tyr
210 215 220
Thr Asn Asp Asp Asn Asn Tyr Asp Asn Asn Tyr Asp Asn Asn Tyr Asp
225 230 235 240
Asn Asn Asp Gly Gln Asn Ile Tyr Asn Val Asn Ile Lys Lys Asn Asn
245 250 255
Tyr Val Asn Ile Ser Ile Asn Thr His Leu Gln Asn Asn Asn Tyr Glu
260 265 270
Ile Lys Gly Asn His Lys Lys Glu Lys Ser Phe Lys Asp Cys Lys Lys
275 280 285
Glu Leu Tyr Thr Asn Val Lys Asp Lys Ile Thr Leu Gln His Lys Glu
290 295 300
Asn Lys Lys Tyr Ile Asp Asn Ser Ile Gln Ser Ile Leu Asn His Asn
305 310 315 320
Glu His Arg Ser Leu Gln Lys Asn Ile His Ile Tyr Asn Asn Lys His
325 330 335
Thr Gln Thr Asn Lys Ala Tyr Asn Ile Gln Glu Val His Asn Phe Ser
340 345 350
Ile Ile Tyr Ser Lys Gln Ile Leu Gln Thr Ala Leu Ile Gln Ile Thr
355 360 365

Tyr Lys Gln Asn Val Asn Gln Met Lys Asn Lys Lys Glu Glu Ile Ile
 370 375 380
 Asn Asn Asp Gln Ile Asn Lys Leu Asn Phe Ser Ile Leu Thr Thr Arg
 385 390 395 400
 Gln Gln Asn Asn Leu His Ile Met Asn Thr Asn Lys Ser Ile His Gly
 405 410 415
 Val Leu Gln Ile Phe Asn Lys Ile Asn Thr Phe Ala Met Ser Asn Asn
 420 425 430
 Ile Ile Asn Ile Leu Ile Lys Lys Asn Val Glu Thr Tyr Asn Glu Val
 435 440 445
 Lys Lys Lys Lys Lys Lys Lys Lys Arg Lys Lys Lys Glu Arg Lys Lys
 450 455 460
 Lys Lys Lys Lys Lys Val Tyr Asp Tyr His Ile Cys Met Phe Pro Tyr
 465 470 475 480
 Ile Pro Ile

<210> 47
 <211> 459
 <212> PRT
 <213> Plasmodium falciparum

<400> 47
 Met Gln Met Asn Glu Glu Asn Ile Ile Thr Arg Lys Ile Asn Cys Leu
 1 5 10 15
 Arg Ser Thr Tyr Glu Glu Lys Lys Leu Arg Tyr Asn Asp Asp Asp Met
 20 25 30
 Ile Asn Lys Asn Tyr Glu Glu Met Leu Asp Lys Ile Glu Glu Cys Ile
 35 40 45
 Lys Leu Arg Asn Gly Tyr Lys Ile Cys Phe Val Leu Lys Ile Ser Gln
 50 55 60
 Ile Pro Leu Asp Ile Tyr Val Ile Asp Asn Ile Asn Glu Asn Asp Val
 65 70 75 80
 Arg Arg Met Ile Lys Lys Lys Asn Ser Tyr Asn Asn Asn Ile Leu Lys
 85 90 95
 Pro Phe Glu Gln Leu Ile Leu Asp His Phe Asn Ile Ile Lys Ile Leu
 100 105 110
 Cys Asn Lys Asn Asn Ile Asn Trp Asp Thr Leu Ile Asn Thr Ser Cys
 115 120 125
 Lys Phe Leu Ser Thr Phe Leu Gln Ile Tyr Cys Asp Asn Leu Trp Leu
 130 135 140
 Leu Pro Tyr Leu Leu Thr Ile Cys Ser Phe Leu Asn Asn Ile Ser Thr
 145 150 155 160
 Leu Ala Asp Ser Tyr Ile Thr Ser Asn Lys Asn Asp Ile Tyr Asn Glu
 165 170 175
 Glu Asn Glu Asp Ile Asn Asn Lys Asn Lys Tyr Thr Ile Glu Val Leu
 180 185 190
 Asn Ser Ile Arg Gly Lys Ile Gly Ile Val Lys Gly Asp Ile Glu Lys
 195 200 205

His Gly Gly Phe Val Ile Leu Met Phe Gln Ser Ile Lys Leu Cys Met
 210 215 220
 Lys Leu Asn Asn Met Gln Ile Thr Ser Ser Phe Leu Lys Ile Ile Asn
 225 230 235 240
 Ser Thr Asp Ile Asn Tyr Ser Tyr Ile Pro Thr Ser Phe Ile Val Leu
 245 250 255
 Phe Lys Asn Gln Leu Gly Lys Leu Tyr Leu Gln Lys Leu Glu Tyr Glu
 260 265 270
 Lys Ala Glu Ser Glu Phe Ile Trp Ala Phe Ser Asn Ser Asn Lys Ser
 275 280 285
 Lys Ile Glu Phe Arg Lys Ile Ile Leu Glu Ser Leu Ile Thr Ile Arg
 290 295 300
 Leu Asn Lys Gly Leu Tyr Pro Pro Lys Lys Leu Leu Gln Lys Tyr Lys
 305 310 315 320
 Leu Ser Ile Tyr Ile Asp Ile Ile Tyr Ser Ile Lys Arg Gly Asn Ile
 325 330 335
 Phe Leu Tyr Asn Asn Val Met Asn Asn Phe Ser Ser Tyr Phe Phe His
 340 345 350
 Lys Gly Leu Asn Glu Cys Ile Glu Gln Ile His Phe Ile Val Lys Arg
 355 360 365
 Asn Leu Ile Lys Ile Val Val Asp Trp Trp Asn Lys Met Val Gln Glu
 370 375 380
 Asn Asn Gln Gln Asn Lys Leu Tyr Lys Val Pro Ile Tyr Leu Phe His
 385 390 395 400
 His Ile Phe Lys Trp Ala His Ile Thr Gln His His Ser Tyr Leu Glu
 405 410 415
 Thr Ile Cys Ile Ile Thr Ser Leu Ile Leu Phe Arg Tyr Ile Asn Ala
 420 425 430
 Tyr Ile Ser Tyr Asp Asn Asn Ile Leu Val Leu Ser Lys Asn Asp Pro
 435 440 445
 Phe Pro Ser Leu Ser His Asn Gln Gly Pro Arg
 450 455

<210> 48
 <211> 132
 <212> PRT
 <213> Plasmodium falciparum

<400> 48
 Met Ala Asn Asn Ile Asn Gly Asp Ile Lys Asn Leu Asp Leu Gly Pro
 1 5 10 15
 Asp Phe Lys Asn Cys Lys Cys Leu Asn Leu Cys Glu Leu Gln Leu Ile
 20 25 30
 Leu Gly Asp Gln Leu Arg Leu Thr Ser Lys Arg Asn Glu Ala Gln
 35 40 45
 Ala Leu Ile Lys Ser Ser Tyr Asp Tyr Ala Asn Lys Phe Ala Ala Ile
 50 55 60
 Lys Asn Arg Ser Ser Ile Val Asp Ile Arg Thr Asn Leu Glu Arg Ile
 65 70 75 80

Gly Asp Leu His Glu Tyr Glu Ile Ala Met Leu Val Asn Leu Leu Pro
 85 90 95

Lys Thr Ile Leu Glu Ala Arg Tyr Leu Ile Pro Ser Leu Ile Arg Leu
 100 105 110

Asn Asp Glu Thr Leu Asn Ser Ile Leu Glu His Leu Ile Ser Tyr Lys
 115 120 125

Met Tyr Val Ser
 130

<210> 49
 <211> 635
 <212> PRT
 <213> Plasmodium falciparum

<400> 49
 Met Gly Phe Val Lys Ala Glu Glu Phe Ile Asn His Tyr Met Arg Val
 1 5 10 15

Asn Lys Glu Ile Lys Glu Leu Ser Asn Arg Lys Asn Glu Glu Phe Lys
 20 25 30

Phe Asn Ile Phe Ile Phe Tyr Tyr Asn Asn Ile Asp Ser Ile Cys Thr
 35 40 45

Glu His Ile Leu His Phe His Lys Asn Leu Lys Arg Glu Ile Asn Val
 50 55 60

Phe Ser Tyr Gly Val Glu Lys Lys Glu Asp Leu Ile Lys Phe Phe Asn
 65 70 75 80

Lys His Asn Asp Ile Tyr Ser Lys Asn Lys Asp Tyr Tyr Arg Asp Tyr
 85 90 95

Phe Phe Gln Val Ile Leu Ile Gly Ile Cys Ser His Ile Asn Thr Asp
 100 105 110

Thr Ser Ile Tyr Glu Asp Ile Glu Lys Phe Phe Ser Asn Leu Leu Ser
 115 120 125

Lys Thr Tyr Leu Gly Tyr Leu Lys Phe Phe Val Ile Asp Asn Lys Arg
 130 135 140

Pro Phe His Glu Ile Phe Phe Asn Asn Asp Lys Trp Glu Leu Val Leu
 145 150 155 160

Asn Glu Leu Glu His Asn Glu Ile Met Thr Ile Tyr Asn Asn Lys Lys
 165 170 175

Asn Asn Asp Lys Lys Lys Leu Tyr Ser Lys Phe Tyr Asp Asn Tyr Tyr
 180 185 190

Ile Val Lys Glu Glu Asn Lys Cys Leu Ser Leu Met Val Tyr Pro Phe
 195 200 205

Ile Gln Cys Ala Gly Glu Asp Asp Ala Ser Ala Ile Ile Phe Ile Ser
 210 215 220

Ser Ile Ser Leu Met Ser Tyr Leu Lys Thr Glu Gln Ile Thr Tyr Asp
 225 230 235 240

Tyr Tyr Asn Lys Glu Ile Lys Asn Leu His Asn Asp Ser Leu Asn Ile
 245 250 255

Ser Asn Gly His Phe Leu Ser Phe Asp Ser Glu Arg Gly Leu Leu Pro
 260 265 270

Met Leu Ser Phe Ile Ser Leu Asn Glu Ala Leu Glu Ile Asp Glu Arg
 275 280 285
 Ile Tyr Ile Tyr Asp His Lys Asn Val Lys Asn Thr Phe Asn Gln Ile
 290 295 300
 Arg Thr Met Cys His Ile Glu Ile Lys Asp Phe Thr Gly Asn Phe Arg
 305 310 315 320
 Gln Leu Asp Leu Lys Lys Gln Asn Glu Ile Leu Ile Lys Leu Lys Asn
 325 330 335
 Phe Ile Lys Ile Ile Lys Pro Met Asn Thr Leu Ala Trp Lys Arg Arg
 340 345 350
 Thr Tyr Val Leu Tyr Asn Ser Asp Ser Phe Tyr Phe Leu Ile Ile Leu
 355 360 365
 Ile His Ile Tyr Ile Asn Arg Ile Lys Lys Met Asp Thr Tyr Leu Tyr
 370 375 380
 Asn Cys Leu Lys Thr Ser Asp Phe Leu Tyr Asn Ile Tyr Lys Asp Arg
 385 390 395 400
 Leu Lys Gln Ser Glu Ile Tyr Asp Lys Leu Ile Glu Lys His Leu His
 405 410 415
 Lys Asn Ala Ala Asn Tyr Leu Ser Ile Leu Ile Lys Lys Val Met Glu
 420 425 430
 Ser His Lys Lys Ser Ile Thr Ile Thr Ser Thr Phe Lys Ile Tyr Met
 435 440 445
 Asp Ile Phe Gln Thr Pro Arg Asn Ser Tyr Thr His Pro Phe Glu Leu
 450 455 460
 Lys Leu Ile Ser Asn Met Phe Ser Ser Phe Gln Ser Tyr Cys Val Asp
 465 470 475 480
 Lys Tyr Lys Thr Tyr His Leu Ile Val Cys Asn Ile Ile Asp Ser Asp
 485 490 495
 Asp Thr Ile Leu Tyr Gly Phe Ala Pro Leu Asn Lys Arg Asp Tyr Trp
 500 505 510
 Pro Leu Ile Phe Ser Lys Ile Ala Tyr Thr Asn Ala Glu Gln Ile Asn
 515 520 525
 Tyr Asp Thr Leu Thr Asp Val Asn Thr Ile Lys Ile Arg Lys Thr Asp
 530 535 540
 Leu Lys Phe Leu Leu Asp Glu Ile Lys Asp Val Phe Arg Gly Ile Ile
 545 550 555 560
 Lys His Asp Tyr Lys Lys Glu Leu Gln Ala Asn Leu Lys Gly Asn His
 565 570 575
 Asp Asp Glu Asp Glu Asp Glu Glu Asp Asp Glu Glu Asn Glu Glu Gln
 580 585 590
 Glu Leu Glu Glu Asp Asp Ile Ile Glu Glu Asp Leu Leu Gly Asp Gln
 595 600 605
 Gln Asp Glu Asp Leu Met Asp Gln Asn Ala Asn His His Glu Ile His
 610 615 620
 Glu Asp Asp Asp Asn Glu His Thr Glu Pro Asn
 625 630 635

<210> 50
 <211> 92
 <212> PRT
 <213> Plasmodium falciparum

<400> 50
 Met Asn Glu Leu Leu Asn Ser Asn Ala Thr Ile Ile Cys Asn Asn Ile
 1 5 10 15
 Pro Ile His Ile Asn Arg Phe Glu Ile Thr Glu Ile Phe Ser Lys Tyr
 20 25 30
 Gly Pro Leu Leu Gly Gln Gly Ile Tyr Phe Gly Lys Lys Asn Ser Asn
 35 40 45
 Phe Phe Phe Val Lys Tyr Val His Leu Lys Asp Ala Ile Lys Ala Tyr
 50 55 60
 Glu Glu Cys Glu His Asp Phe Lys Leu Ser Phe Ser Lys Asn Asp Glu
 65 70 75 80
 Ile Lys Tyr Lys Ala Leu Lys Gly Asn Ser His Lys
 85 90

<210> 51
 <211> 959
 <212> PRT
 <213> Plasmodium falciparum

<400> 51
 Met Thr Ala Glu Asp Lys Lys Val Asn Ser Lys Val Arg Lys Leu Asn
 1 5 10 15
 Asn Ser Lys Ile Lys Lys Glu Glu Leu Asn Glu Glu Glu Lys Lys Lys
 20 25 30
 Lys Glu Glu Leu Glu Leu Leu Ile Thr Arg Leu Arg Asp Glu Asp Val
 35 40 45
 Asn Val Val Asn Leu Ser Ile Ser Leu Leu Asn Lys Glu Ile Ile Asp
 50 55 60
 Thr Ser Gly Ile Leu Thr Ser Ser Leu Leu Ala Leu Lys Val Leu Lys
 65 70 75 80
 Thr His Tyr Asn Thr Leu Ile Glu Ile Phe Asn Glu Met Ile Phe Glu
 85 90 95
 Glu Cys Lys Lys Lys Leu Ser Asn Met Ile Ser Ala Leu Ser Thr Thr
 100 105 110
 Ile Gly Asp Glu Asn Asn Ile Val Lys Phe Val Ile Thr Gly Asn Lys
 115 120 125
 His Asp Leu Ile Asn Tyr Gly His Glu Tyr Ile Lys Asn Leu Ile Thr
 130 135 140
 Lys Leu Leu Val Glu Tyr Lys Ile Leu Lys Glu Glu Glu Asn Asn Gln
 145 150 155 160
 Asn Gly Leu Thr Thr Thr Ser Thr Thr Ser Asn Lys Leu Val Thr Ile
 165 170 175
 Asn His Ile Tyr Asp Ile Val Asn Ile Val Val Pro Tyr Cys Phe Ala
 180 185 190
 His Asn Thr Glu Tyr Glu Ala Ile Asp Leu Leu Ile Glu Val Asp Lys
 195 200 205

Ile Asn Asp Ile Tyr Leu Tyr Val Asp Glu Lys Ser Cys Asp Arg Ser
 210 215 220
 Ile Leu Tyr Leu Leu Asn Leu Thr His Tyr Ser Ser Ser Thr Asp Glu
 225 230 235 240
 Tyr Tyr Lys Leu Met Asp Val Ile Leu Asn Ile Leu Lys Lys His Asn
 245 250 255
 Lys His Val Glu Cys Leu Lys Ile Leu Leu Arg Leu Asn Lys Ile Asp
 260 265 270
 Lys Ile Lys Asp Leu Ile Phe Glu Cys Asn Asp Ile Leu Ile Cys Lys
 275 280 285
 Gln Ile Ala Leu Ile Cys Ser Arg His Cys Val His Ile Gln Phe Thr
 290 295 300
 Glu Glu Glu Ile Lys Lys Tyr Thr His Leu Asn Leu Asn Glu Ile Ser
 305 310 315 320
 Thr Leu Thr Ser Gly Glu His Leu Ser Pro Ile Phe Leu Lys Leu Ala
 325 330 335
 Lys Asp Leu Asp Val Glu Glu Pro Lys Leu Pro Glu Asp Val Tyr Lys
 340 345 350
 Ser His Leu Glu Glu Lys Arg Asn Thr Thr Val Trp Asp Ser Ala Lys
 355 360 365
 Gln Asn Leu Ser Ser Thr Phe Val Asn Ala Phe Val Asn Ala Ala Phe
 370 375 380
 Cys Lys Asp Lys Leu Met Thr Val Asn Ser Ser Leu Trp Ile Phe Lys
 385 390 395 400
 Asn Lys Asp Tyr Gly Leu Met Ser Ala Thr Ala Ser Met Gly Leu Leu
 405 410 415
 Leu Met Trp Asn Leu Asp Glu Gly Leu Ser Gln Ile Asp Lys Phe Gln
 420 425 430
 Tyr Ser Ser Asp Gln Tyr Val Lys Ala Gly Ala Leu Met Ala Phe Gly
 435 440 445
 Leu Ala Cys Thr Asn Ile Lys Asn Glu Cys Asp Pro Ala Tyr Ala Leu
 450 455 460
 Leu Ser Glu His Ile Asp Ala Glu Asn Ala Leu Glu Lys Met Gly Ala
 465 470 475 480
 Ile Leu Gly Phe Gly Tyr Ala Tyr Ala Gly Thr Asn Arg Glu Asn Leu
 485 490 495
 Leu Asp Ile Leu Ile Pro Pro Leu Val Asp Asn Gly Cys Ile Ile Glu
 500 505 510
 Cys Ser Val Tyr Ala Ala Leu Ser Leu Gly Leu Val Phe Val Gly Ser
 515 520 525
 Gln Asn Arg Glu Ile Ala Glu Tyr Ile Ile Asp Thr Val Leu Glu Lys
 530 535 540
 Glu Lys Ile Asn Asn Ser Leu Asp Thr Pro Ile Ala Lys Leu Tyr Ala
 545 550 555 560
 Val Ala Leu Gly Leu Leu Phe Leu Cys Ser Arg Glu Lys Cys Glu Ala
 565 570 575

Thr Leu Ser Ala Leu Glu Ile Ile Lys His Pro Ile Ser Lys Tyr Met
 580 585 590
 Ile Ala Thr Val Glu Gly Met Ala Phe Ala Gly Ser Asn Asp Val Leu
 595 600 605
 Lys Val Gln Lys Met Leu Gln Val Leu Val Glu Lys Arg Gly Asp Lys
 610 615 620
 Lys Asn Asn Ser Asp Asn Lys Thr Thr Thr Ala Asn Asn Thr Asp Asn
 625 630 635 640
 Asn Lys Ser Ser Asn Ala Asp Ile Asn Lys Thr Thr Thr Thr Asp Thr
 645 650 655
 Ser Lys Lys Thr Asp Asn Asn Asn Asn Asn Ser Ser Ser Asn Asn Lys
 660 665 670
 Asn Thr Lys Ser Asn Glu Glu Lys Ser Ser Ser Ser Lys Asn Tyr Val
 675 680 685
 Glu Asp Asn Leu Asp Gln Cys Val Ala Ile Leu Asn Ile Ala Leu Ile
 690 695 700
 Ala Leu Thr Asp Asp Ile Ser Ser Asp Met Thr Thr Arg Ile Ile Asp
 705 710 715 720
 His Phe Leu Gln Tyr Ser Asn Val Asn Gln Lys Lys Ala Val Pro Leu
 725 730 735
 Ala Leu Ala Leu Leu Phe Thr Ser Phe Pro Lys Pro Asn Ile Val Asp
 740 745 750
 Ile Leu Ser Lys Leu Thr His Asp Gln Asp Pro Asp Val Ala Leu His
 755 760 765
 Ala Ile Ile Ser Leu Gly Phe Val Gly Ala Gly Thr Asn Asn Ser Arg
 770 775 780
 Ile Ala Ile Leu Leu Arg Gln Leu Ser Ala Phe Tyr Cys Lys Asp Thr
 785 790 795 800
 Asn Ala Ile Phe Val Val Arg Leu Ala Gln Gly Leu Leu Tyr Met Gly
 805 810 815
 Lys Gly Leu Leu Thr Ile Asn Pro Leu His Ser Asn Arg Ser Ile Ile
 820 825 830
 Asn Tyr Val Ser Leu Gly Ser Leu Leu Ile Thr Ile His Ala Cys Leu
 835 840 845
 Gln Leu Lys Ser Thr Ile Leu Gly Lys Tyr His Tyr Leu Leu Tyr His
 850 855 860
 Leu Val Pro Cys Ile Tyr Pro Arg Met Leu Val Thr Val Asn Glu Lys
 865 870 875 880
 Leu Glu Ser Leu Pro Val Ser Val Arg Val Gly Gln Ala Val Asp Ile
 885 890 895
 Val Gly Gln Ala Gly Lys Pro Lys Thr Ile Thr Gly Phe Gln Thr His
 900 905 910
 Val Thr Pro Val Leu Leu Ser His Thr Asp Arg Ala Glu Met Ala Thr
 915 920 925
 Glu Glu Cys Lys Asp Tyr Ile Ser Val Asn Asp Thr Leu Glu Gly Ile
 930 935 940
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945

950

955

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 <211> 1516
 <212> PRT
 <213> Plasmodium falciparum

<400> 52

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 Val Asn Pro Glu Ile Phe Thr Gly Lys Arg Ile Ala Ile Asp Val Ser
 20 25 30
 Ile Trp Leu Tyr Glu Leu Thr Tyr Ala Asn Asn Val Lys Asp Leu Arg
 35 40 45
 Asn Lys Ser Phe Asp Asn Met Ser Ile Phe Asn Asp Leu Trp Ile Asp
 50 55 60
 Phe Ser Glu Asn Ile Ser Ser Glu Ile Lys Thr Asp Asn Ile Lys Lys
 65 70 75 80
 Ala His Leu Tyr Phe Phe Phe Leu Arg Ile Cys Lys Leu Leu Tyr Tyr
 85 90 95
 Asn Ile Arg Pro Ile Phe Ile Phe Asp Gly Asn Pro Pro Glu Leu Lys
 100 105 110
 Arg Lys Thr Ile Phe Gln Arg Asn Ile Lys Lys Arg Asn Tyr Glu Glu
 115 120 125
 Lys Phe Lys Lys Thr Ala Glu Lys Leu Val Tyr Asn Tyr Tyr Gln Arg
 130 135 140
 Thr Leu Leu Asn Ser Met Lys Ser Lys Asn Lys Lys Asn Asp Asn Ser
 145 150 155 160
 Asn Asn Ile Glu Asp Lys Thr Asn Thr Pro Asn Lys Thr Asn Thr Gln
 165 170 175
 Asn Lys Ser Asn Thr Gln Asn Lys Ser Asn Thr Pro Asn Lys Ile Asn
 180 185 190
 Ala Asp Ile Ser Lys Ser Ser Leu Ile Gln Ile Tyr Asp Asp Ile Lys
 195 200 205
 Glu Lys Asp Lys Ser Leu Asn Ser Leu Val Glu His Val Gly Asn Val
 210 215 220
 Pro Val Ser Val Lys Asp Val Leu Thr Ile Cys Asn Asp Asp Leu Ser
 225 230 235 240
 Lys Ile Lys Asn Lys Ile Phe Met Ile Thr Asp Phe Gly Pro Val Leu
 245 250 255
 Phe Leu Gly Glu Gln Asp Gly Asp Met Gly Thr Val Glu Asn Ile Asn
 260 265 270
 Lys Leu Asp Asn Arg Asn Lys Asp Glu Asn Asn Leu Ser Tyr Ser Ile
 275 280 285
 Asn Tyr Asn Lys Val Gln Asp Val Asn Asn Asn Asn Asp Asp Asp Lys
 290 295 300
 Asp Lys Asp Lys Glu Asn Ile Asn Glu Val Arg Arg Asp Gln Lys Asn
 305 310 315 320
 Tyr Val Tyr Lys Asn Lys Glu Asn Ile Asn Asn Ile Tyr Leu Asp Asp

325										330					335 ^F				
Asp	Asp	Glu	Lys	Glu	Asp	Ile	Gln	Asn	Lys	Asn	Gly	Val	Tyr	Asn	Asn				
			340					345					350						
Asp	Asp	Ile	Asp	Glu	Gln	Ile	Ile	Arg	Lys	Lys	His	Met	Ala	Arg	Lys				
		355					360					365							
Lys	Tyr	Tyr	Glu	Ser	Ile	Pro	Lys	Thr	Phe	Lys	Gly	Phe	Leu	Cys	Met				
	370					375					380								
Arg	Arg	Pro	Val	Asp	Ile	Ile	Asp	Ile	Ser	Asn	Tyr	Asn	Thr	Glu	Met				
385					390					395					400				
Leu	Glu	Ile	Ser	Glu	Thr	Leu	Lys	Val	His	Glu	Asn	Lys	Phe	Lys	Gln				
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His	Leu	Asn	Val	Leu	Asp	Glu	Asn	Asn	Ser	Thr	Pro	Val	Val	Asn	Met				
			420					425					430						
Asn	Leu	Leu	Lys	Asn	Ile	Asn	Tyr	Lys	Lys	Asn	Asp	Asp	Leu	Ile	Glu				
		435					440					445							
Gly	Gly	Glu	Lys	Lys	Ser	Phe	Ile	Asn	Leu	Ile	Asn	Val	Asp	Ser	Cys				
	450					455					460								
Tyr	Ser	Ser	Ser	Asn	Ser	Arg	Leu	Glu	Asn	Asp	Glu	Asn	Ile	Glu	Arg				
465					470					475					480				
Gly	Lys	Ile	Asn	Met	Phe	Ile	Thr	Asn	Asp	Glu	Lys	Ser	Ile	Asn	Ile				
				485					490					495					
Asn	Asn	Tyr	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asp				
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Asn	Asn	Met	Asp	Asn	Asn	Asp	Val	Ile	Ile	Glu	His	Asn	Lys	Asn	Asn				
		515					520					525							
Met	Asn	Ile	Tyr	Asp	Asn	Lys	Tyr	Asn	Val	Glu	Cys	Ser	Ser	Glu	Lys				
	530					535					540								
Ile	Asn	Asp	Asn	Gly	Ile	Ser	Asn	Lys	Asn	Ile	Asn	Ile	Leu	Glu	Leu				
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Pro	Asn	Asn	Leu	Asp	Thr	Ser	Asn	Ile	Phe	Leu	Glu	Gly	Lys	Asp	Glu				
				565					570					575					
Tyr	Lys	Val	Tyr	Tyr	Val	Asn	Lys	Glu	Glu	Ile	Arg	Ile	Pro	Leu	Phe				
			580					585					590						
Lys	Glu	Ile	Asn	Lys	Glu	Ile	Phe	Glu	Lys	Leu	Pro	Leu	Lys	Leu	Gln				
		595					600					605							
Tyr	Gln	Ile	Leu	Gln	Asp	Ile	Lys	Glu	Glu	Trp	Tyr	Thr	Asp	Asn	Arg				
	610					615					620								
Ile	Lys	Ala	Ile	Lys	Ser	Lys	Asp	Asp	Met	Asp	Val	Phe	Ser	Gln	Val				
625					630					635					640				
Gln	Leu	Glu	Thr	Tyr	Val	Arg	Met	Ile	Lys	Thr	Asp	Phe	Glu	Ile	Glu				
				645					650					655					
Lys	Leu	Lys	Ile	Lys	Met	Ala	Glu	Asn	Ile	Gln	Ser	Val	Glu	Gly	Glu				
			660					665					670						
Leu	Leu	Ile	Asn	Lys	Asp	Leu	Ser	Lys	Asn	Thr	Asp	Asn	Ile	Asn	Ile				
		675					680					685							
Lys	Asp	Tyr	Asn	Val	Leu	Gln	Lys	Lys	Lys	Ser	Lys	Lys	Lys	Lys	Lys				
	690					695					700								

Lys Phe Leu Asn Asp Ile Leu Asn Thr Tyr Asn Phe Thr Thr Glu Ser
 705 710 715 720
 Lys Tyr Gln Asp Leu Tyr Val Lys Gly Glu Glu Ser Lys Glu Asp Ile
 725 730 735
 Lys Asn Gln Ile Asp Phe Val Thr Gln Glu Cys Tyr Arg Asn Asn Asp
 740 745 750
 Ile Ile Arg Asp Thr His Asp Lys Ser Asp Ile Phe Lys Asn Ile Lys
 755 760 765
 Ile Asp Asn Asn Lys Lys Tyr Glu Ile Tyr Asn Leu Glu Leu Glu Gln
 770 775 780
 Glu Glu Ile Asn Glu Lys Lys Asn Tyr Asn Lys Asn Asn Asp Ser
 785 790 795 800
 Asn Lys Thr Phe Phe Leu Lys Ile Glu Asn Glu Phe Lys Lys Asp Leu
 805 810 815
 Leu Leu Asp Asp Ser Gln Ile Phe Gly Asp Ser Leu Leu Ala Asp Ile
 820 825 830
 Lys Glu Tyr Asn Tyr Thr Ala Asp Asn Leu Asp Asn Asn Glu Asn
 835 840 845
 Lys Ser Leu Tyr Glu Asp Gly Glu Asn Phe Ile Thr Arg Asn Glu Pro
 850 855 860
 Ile Thr Asn Glu Tyr Glu Glu Lys Asn Asn Ile Ile Tyr Ile Ser Asp
 865 870 875 880
 Glu Gln Lys Tyr Asn Glu Glu Asp Ile Ile Phe Lys Asp Lys Ile Lys
 885 890 895
 Glu Lys Glu Lys Asn Asn Asp Thr Ser Ser Asp Asp Phe Glu Asn Cys
 900 905 910
 Ser Val Gln Glu Lys Ile Tyr Val Asn Glu Lys Ile Glu Glu Tyr Asn
 915 920 925
 Asn Lys Asn Asp Asp Lys Ser Ser Ser Ser Ser Ile Ile Leu Glu
 930 935 940
 Glu Ile Lys Tyr Lys Lys Glu Lys Lys Asp Glu Leu Val Ser Pro Asn
 945 950 955 960
 Leu Cys Val Leu Leu Asp Glu Phe Glu His Ser Asn Asp Leu Glu Asn
 965 970 975
 Asn Tyr Ile Ser Val Ser Ser Asp Asp Met Lys Thr Asn Val Ser Lys
 980 985 990
 Asn Asn Ile Thr Gly Val Lys Glu Asn Lys Val Asp Lys Thr Asn Val
 995 1000 1005
 Glu Tyr Asp Lys Lys Gly Asp Asp Gly Val Ile Glu Ile Ser Phe Glu
 1010 1015 1020
 Asp Ser His Lys Leu Glu Glu Ser Lys Phe Asp Asp Asn Asn Ile
 1025 1030 1035 1040
 Tyr Asp Asn Asp Asp Glu Leu Glu Lys Asn Leu Ser Lys Asp Tyr Ile
 1045 1050 1055
 Ser Asp Val Asp Lys Asn His Val Asn Asn Ile Tyr Asn Ile Glu Arg
 1060 1065 1070

Gly Glu Asp Glu Arg Glu Asn Glu Phe Val Glu Asn Lys Ile Gln Ser
 1075 1080 1085

Thr Glu Ser His Lys Ser Asn Glu Phe Ile Cys Thr Glu Asn Lys Ser
 1090 1095 1100

Leu Arg Lys Gln Tyr Met Ser Lys Glu Asp Ile Ser Asn Val Arg Ile
 1105 1110 1115 1120

Leu Lys Ser Asp Asp Ile Asn Asn Leu Ser Lys Gln Asn Tyr Phe Glu
 1125 1130 1135

Ile Leu Leu Asp Lys Lys Gln Val Met Asp Asn Phe Gln Met Asn Ile
 1140 1145 1150

Glu Gln Asn Asn Asp Lys Leu Lys Glu Asp Lys Leu Asp Glu Gly Ala
 1155 1160 1165

Tyr Phe Glu Tyr Leu Glu Asp Asn Lys Ile Ile Asp Ser Tyr Ile Lys
 1170 1175 1180

Glu Thr Asn Lys Glu Asn Glu Glu Leu Ile Lys Glu Tyr Lys Lys Leu
 1185 1190 1195 1200

Lys Lys Asn Asn Ile Glu Ile Asn Asp Glu Met Asn Asp Asp Ile Lys
 1205 1210 1215

Leu Leu Leu Asn Phe Phe Gly Ile Pro Tyr Ile Gln Ser Pro Cys Glu
 1220 1225 1230

Ala Glu Ala Gln Cys Ser Tyr Leu Asn Asn Lys Asn Tyr Cys Asp Ala
 1235 1240 1245

Ile Ile Ser Asp Asp Ser Asp Val Leu Val Phe Ser Gly Lys Thr Val
 1250 1255 1260

Ile Lys Asn Phe Phe Asn Lys Lys Lys Thr Val Glu Val Tyr Glu Lys
 1265 1270 1275 1280

Lys Ala Ile Glu Glu Lys Leu Gly Leu Tyr Gln Glu Glu Leu Ile Asn
 1285 1290 1295

Ile Ser Leu Leu Cys Gly Cys Asp Tyr Thr Ile Gly Val His Gly Ile
 1300 1305 1310

Gly Ile Val Asn Ala Leu Glu Ile Ile Lys Ala Phe Pro Asn Phe Glu
 1315 1320 1325

Asp Leu Lys Ile Leu Lys Asp Ile Val Ser Asn Pro Phe Arg Lys Ile
 1330 1335 1340

Asp Lys Asn Met Tyr Asn Glu Glu Ile Gln Gln Phe Leu Asn Thr His
 1345 1350 1355 1360

Lys Asn Tyr Lys Leu Asn Trp Ile Phe Pro Asn Asn Phe Pro Asp Arg
 1365 1370 1375

Glu Val Tyr Lys Cys Phe Lys Tyr Pro Lys Val Cys Thr Asp Ile Lys
 1380 1385 1390

Lys Phe Glu Trp His Val Pro Asp Ile Lys Ser Ile Thr Lys Phe Leu
 1395 1400 1405

His Lys Thr Thr Asn Ile Ser Glu Glu Lys Val Leu Asn Val Leu Asn
 1410 1415 1420

Pro Ile Leu Gln Lys Tyr Asn Val Asn Val Arg Thr Tyr Gln Ser Lys
 1425 1430 1435 1440

Ile Glu Asp Phe Phe Pro Leu Leu Glu Lys Lys Arg Lys Thr Val Asp

1445

1450

1455

Asp Leu Ile Asp His Ile Arg Ala Asn Asn Lys Gln Lys Arg Gln Lys
 1460 1465 1470

Asn Lys Thr Val His Leu Asp Ser Lys Ile Ser Pro Leu Ile Asp Ile
 1475 1480 1485

Asn Pro Ala Gly Ile Ile Lys Ser Lys Arg Met Ser Ser Ala Leu Asp
 1490 1495 1500

His Ile Lys Arg Arg Lys Ser Ser Lys Lys Lys Lys
 1505 1510 1515

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<211> 133

<212> PRT

<213> Plasmodium falciparum

<400> 53

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Asn Gln Val Leu Gly Cys Gln Ser Val Val Tyr Ile Tyr Pro Lys Val
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Glu Glu Asn Glu Asp Lys Lys Lys Val Ile Asn Thr Val Leu Ser Leu
 35 40 45

Leu Tyr Ile Tyr Ile Tyr Asn Ile Phe Phe Leu Asn Met Tyr Ser Leu
 50 55 60

Asp Gly Leu Leu Thr Lys Gly Ile Val Tyr Ile Leu Thr Asp Gly Leu
 65 70 75 80

Ser Gly Tyr Met Pro Glu Asp Ile Leu Lys Val Asn Pro Asn Phe Ile
 85 90 95

Thr Leu Thr Gly Ile Ser Glu Phe Leu Thr Met Ser Arg Ile Asn Gly
 100 105 110

Tyr Leu Asn Ile Met Asn Lys Ile Lys Ile Phe Cys Thr Asn Ile Leu
 115 120 125

Lys Asn Met Asp Asn
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<210> 54

<211> 567

<212> PRT

<213> Plasmodium falciparum

<400> 54

Met Ile Met Ala Lys Asn Gln Tyr Met Glu Asp Arg Asn Ile Arg Glu
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Pro Asn Thr Leu Leu Gly Glu Glu Thr Glu Gln Leu Val Asp Ser Phe
 20 25 30

His Tyr Glu Asn Asn Ser Ser Ser Ile Tyr Lys Lys Val Asn Ser Asn
 35 40 45

Arg Ser Lys Asn Gly Lys His Ser Met Ala Phe His Lys Ser Leu Ala
 50 55 60

Val Val Asn Val Ala Ala Gly Leu Asp Gly Cys Asp Asp Gln Leu Leu
 65 70 75 80

Pro Ala Ser Phe Arg Ala Leu Glu Ala Asp Leu Asn Leu His Pro Ser
 85 90 95
 Leu Leu Gly Tyr Ile Thr Leu Ala Gln Thr Leu Met Leu Ser Leu Phe
 100 105 110
 Ser Pro Ile Trp Gly Phe Leu Ser Asp Lys Tyr Ser Arg Lys Trp Met
 115 120 125
 Leu Val Phe Gly Thr Ala Leu Trp Gly Val Ala Thr Ile Leu Leu Ala
 130 135 140
 Asn Ile Asn Asp Phe Ala His Ile Leu Phe Phe Arg Ala Ile Asn Gly
 145 150 155 160
 Leu Ala Leu Gly Ser Ile Gly Pro Ile Ser Gln Ser Ile Leu Ala Asp
 165 170 175
 Ala Ala Lys Asn Glu Ser Leu Gly Leu Ser Phe Gly Leu Val Gln Leu
 180 185 190
 Ser Ser Ser Leu Gly Arg Leu Ile Gly Gly Val Val Thr Thr Thr Val
 195 200 205
 Ala Leu Lys Tyr Phe Gly Gly Ile Arg Gly Trp Arg Leu Cys Phe Ile
 210 215 220
 Val Val Gly Ile Leu Ser Val Leu Leu Ser Ile Ile Val Ala Leu Phe
 225 230 235 240
 Val Glu Asp Ala Pro Arg Gln Val Arg Lys Asn Lys Lys Met Asp Tyr
 245 250 255
 Leu Asp Gly Glu Ser Asn Thr Asn Ala Ser Asn Asn Asn Asn Asn Ser
 260 265 270
 Asn Asn Asn Asn Ile Asn Asn Asn Ile Asn Met Asn Asn Ser Leu Asp
 275 280 285
 Asn Asn Asn Ser Phe Thr Gly Leu Ser His Gln Ser Thr Arg Thr Tyr
 290 295 300
 Ile Leu Tyr Gln Asn Ile Val Glu Leu Leu Lys Asp Ser Leu Ser Lys
 305 310 315 320
 Lys Ser Ile Ile Ile Ile Leu Leu Glu Gly Phe Thr Gly Thr Ile Pro
 325 330 335
 Trp Leu Ala Leu Ser Phe Asn Thr Met Phe Phe Gln Tyr Cys Gly Leu
 340 345 350
 Ser Asp Leu Gln Ala Ala Ile Ile Thr Gly Phe Leu Leu Ile Gly Ser
 355 360 365
 Ala Ile Gly Gly Val Val Gly Gly His Phe Gly Asp Ile Met His Asp
 370 375 380
 Ile Ser Asn Lys His Gly Arg Pro Leu Leu Gly Gln Leu Ala Met Phe
 385 390 395 400
 Gly Arg Val Pro Leu Val Leu Leu Ile Tyr Leu Val Ile Pro Lys Arg
 405 410 415
 Lys Glu Ser Phe Glu Leu Phe Ala Leu Ser Cys Phe Cys Ile Gly Leu
 420 425 430
 Ser Ser Ile Ala Gly Val Ala Val Asn Arg Pro Ile Val Ser Asp Ile
 435 440 445
 Ile Arg Pro Asp Tyr Arg Gly Thr Val Phe Ser Leu Thr Ile Ala Ile

450 455 460
 Glu Gly Val Gly Ser Ser Leu Ile Gly Ala Pro Leu Phe Gly Tyr Leu
 465 470 475 480
 Ala Glu Lys Ile Phe Lys Tyr Gln Asn Asn Asn Leu Leu Ile Ser Asp
 485 490 495
 Met Pro Glu Asp Ile Arg Ile Asn Asn Ala Gln Ala Leu Ser Lys Thr
 500 505 510
 Leu Phe Tyr Leu Thr Ile Ile Pro Trp Ile Leu Ser Phe Ile Phe Tyr
 515 520 525
 Ser Leu Leu His Phe Thr Tyr Gly Lys Glu Tyr Leu Lys Met Asn Glu
 530 535 540
 Ile Ile Gln Asn Glu Tyr Lys Tyr Asp Asp Glu Asp Glu Glu Thr Ile
 545 550 555 560
 Pro Glu Lys Lys Met Leu Thr
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 <213> Plasmodium falciparum

<400> 55
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 20 25 30
 His Pro Gln Gly Asn Asn Asn His Gln Asn Lys Gln Asn Asn Ile Leu
 35 40 45
 Ile Asn Arg Asn Thr Lys Glu Thr Lys Pro Leu Lys Gly Ile His Thr
 50 55 60
 Arg Leu Ser Thr Val Asn Val Gly Tyr Gly Ile Lys Asp Ala Ile Gly
 65 70 75 80
 Gln Ile Phe Lys Tyr Lys His Lys Tyr Asn Glu Tyr Leu Asn Tyr Gly
 85 90 95
 Ile Leu Cys Glu Leu Arg Ile Leu Tyr Glu Leu Asn Ile Ile Asp Leu
 100 105 110
 Ile Tyr Leu Leu Glu Val Glu Glu Ile Met Arg Arg Tyr Asn Met Lys
 115 120 125
 Tyr Glu Ile Asn Glu Thr Tyr Leu Ser Leu His Ile Lys Asp Val Ile
 130 135 140
 His Asn Leu Tyr Val Ser Asn Tyr Ile Val Tyr Leu Asn Tyr Leu Val
 145 150 155 160
 Leu Phe Asn Pro Val His Ile Ser Lys Ile Lys Lys Asn Ile Leu Ile
 165 170 175
 Gln Ile Pro Met Asp Ile Ile Leu Lys Val Leu Cys Pro Asn Val Phe
 180 185 190
 Ile Ser Ser Tyr Lys Lys Thr Asn Ile Ile Asn Ile Asn Glu Asn Ser
 195 200 205
 Ile Tyr Leu Ile Asp Ser Ser Asp Lys Glu Asn Asp Arg Pro Met Ser

210					215					220					
Ser 225	Lys	Arg	Lys	Arg	Glu 230	Ser	Lys	Tyr	Lys	Lys 235	Val	Glu	Lys	Lys	Lys 240
Asn	Ser	Lys	Glu	Lys 245	Cys	Asp	Lys	Lys	Ile 250	Thr	Asn	Glu	Val	Thr	Ile 255
Thr	Asn	Thr	Glu 260	Leu	Asn	Asn	Glu	Gly 265	Ile	Lys	Glu	Glu	Thr 270	Lys	Glu
Leu	Ile	Asn 275	Glu	Ala	Asn	Asn	Pro 280	Ser	Ile	Lys	Lys	Asp 285	Thr	Thr	Glu
Phe 290	Phe	Leu	Glu	Thr	Asn	Met 295	Lys	Arg	Lys	Asn	Ile 300	Leu	Leu	Pro	His
Thr 305	Gly	Asn	Lys	Ser	Glu 310	Ser	Ile	Arg	Val	Ile 315	Tyr	Ala	Ser	Cys	Leu 320
Ser	Ser	Asn	Lys	Ile 325	Tyr	Leu	Arg	Asn	Ile 330	Asn	Met	Cys	Tyr	Asp 335	Val
Val	Val	Phe	Ile 340	Lys	Ile	Leu	Arg	Asp 345	Leu	His	Phe	Pro	Ile 350	Met	Leu
Lys	Gly	Arg 355	Lys	Ile	Asp	Lys	Tyr 360	Ile	Asp	Asn	Ile	Ile 365	Asn	Ile	Gln
Lys 370	Lys	Val	Tyr	Ser	Glu	Glu 375	Met	Glu	Lys	Ile	Asp 380	Asp	Glu	Lys	Arg
Phe 385	Thr	Ser	Val	Glu	Ser	Ile 390	Asn	Asn	Ser	Phe 395	Asn	Ile	Asn	Asn	Met 400
Glu	Asn	Ile	Phe	Arg 405	Ile	Gln	Asn	Val	Ser 410	Tyr	Leu	Glu	Arg	Val 415	Ala
Ile	Leu	Glu	Cys 420	Lys	Lys	Tyr	Cys	Lys 425	Gly	Glu	Lys	Lys	Tyr 430	Lys	Tyr
Asn	Asn	Phe 435	Asn	Lys	Asn	His	Arg 440	Ile	Lys	Lys	Lys	Lys 445	Cys	Asn	Val
Cys 450	Lys	Cys	Thr	Glu	Gln	Glu 455	Lys	Lys	Asn	Leu	Gly 460	Lys	Ile	Ser	Lys
Glu 465	Tyr	Met	Thr	Ala	Cys 470	Ile	Glu	His	Ser	Ser 475	Leu	Ser	Tyr	Phe	Phe 480
Leu	Lys	Lys	Glu	Lys 485	Asn	Val	Ile	Ile	Ile 490	Glu	Gly	Asn	Val	Asp 495	Lys
Ser	Asp	Thr	Leu 500	Phe	Lys	Asn	Phe	Val 505	Phe	Lys	Lys	Lys	Val 510	Ile	Leu
Asn	Val	Tyr 515	Asn	Cys	Gly	Thr	Val 520	Cys	Arg	Phe	Ile	Leu 525	Pro	Leu	Leu
Cys 530	Leu	Tyr	Ile	Cys	Lys	Gln 535	Asn	Ile	Lys	Ala	Gln 540	Glu	Glu	Asn	Lys
Thr 545	Lys	Ile	Lys	Tyr	Ile 550	Ile	Leu	Lys	Gly	Cys 555	Lys	Gln	Met	Glu	Asn 560
Val	Arg	Ile	Ile	His 565	Pro	Leu	Val	Asn	Val 570	Leu	Arg	Lys	Cys	Phe 575	Lys
Tyr	Ile	Lys	Ile 580	Lys	Tyr	Leu	Lys	Lys 585	Lys	His	Tyr	Leu	Pro 590	Ile	Ser

Ile Ser Ile Lys Lys His Ile Leu Asn Ile Thr His His Asp Ile Phe
 595 600 605
 Leu Thr Lys Gln Ile Tyr Val Asp Asn Tyr Tyr Ser Ser Gln Phe Ile
 610 615 620
 Ser Ser Leu Leu Leu Ile Ser Pro Phe Ser Lys Asn Asn Thr Lys Leu
 625 630 635 640
 Cys Leu Asn Tyr Lys His Ser Tyr Lys Thr Lys Asn Met Ile Asn Asn
 645 650 655
 Asp Tyr Thr Asn Lys Tyr Ile Ile Asn Lys Gln Lys Asn Ile Phe Tyr
 660 665 670
 Asn Asn Ile Lys Asn Asn Ile Lys Tyr Lys Ile Arg Tyr Leu Tyr Asn
 675 680 685
 Ile Ser His Gln Glu Lys Lys Lys Lys Lys Lys Leu Thr Phe Phe Lys
 690 695 700
 Lys Tyr Met Leu Lys Lys Glu Cys Leu Leu Lys Asn Ser Ile Leu Asn
 705 710 715 720
 Lys Leu Ile Ile Pro His Asp Cys Lys Lys Gly Thr Met Ile Leu Asn
 725 730 735
 Gln Asn Ile His Leu Asn Glu Glu Asn Lys Asn Asp Ile Thr Thr Lys
 740 745 750
 Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Lys
 755 760 765
 Val Asn Asn Gln Ile Cys Val Gln His Lys Leu Pro Cys Asp Tyr Thr
 770 775 780
 Phe Tyr Gln Asn Ile Lys Lys Glu Asp Tyr Lys Gln Cys Gly Leu Phe
 785 790 795 800
 Asn Thr Thr Ser Lys Ala Phe Ile Asp Met Thr Leu Tyr Val Met Arg
 805 810 815
 Thr Trp Gly Ile His Ile Lys Val Asn His Lys Gly Ile Tyr Tyr Val
 820 825 830
 Gln Lys Lys Glu Met Tyr Gln Leu Tyr Asp Asp Asn Asn Asn Asn Asn
 835 840 845
 Asn Asn Asn Asn Lys Ser Asp Ile Cys Leu Asn Arg Val Asn Pro Asn
 850 855 860
 Lys Cys Ser Ser Glu Lys Lys Thr Asn Asn Pro Asn Ser Ser Ser Ile
 865 870 875 880
 Leu Lys Lys Asp Lys Glu Lys Lys Lys Asn Gln Met Asp Gly Lys Ile
 885 890 895
 Val Thr Asn Leu Val Lys Gly Asp Asn Lys Glu Glu Glu Gly Asn Asn
 900 905 910
 Asn Ile Ile Lys Asn Asp Asp Ser Ala Ser Lys Gly Thr Asn Glu His
 915 920 925
 Met Met Gln Arg Ile Asn Asp Ala Glu Thr Thr Gln Asn Asn Thr Leu
 930 935 940
 His Lys Glu Asn Lys Leu Cys Thr Thr Lys Asp Gln Asn Lys Ile His
 945 950 955 960

Thr Lys Ile Asn Ser Lys Glu Asn Glu Lys Val Lys Lys Tyr Tyr Tyr
 965 970 975
 Tyr His Ile Asn Asn Asp Leu Gly Leu Tyr Phe Tyr Phe Leu Val Gly
 980 985 990
 Phe Ile Ile Lys Lys Lys Asn Cys Thr Ile Ser Leu Lys Leu Asn Ile
 995 1000 1005
 Asn Asn Leu Asn Val Lys Tyr Lys Gly Asn Asn Ile Tyr Lys Ile Lys
 1010 1015 1020
 Thr Val Met Tyr Gln Lys Asp Ile Tyr Asn Tyr Tyr Leu Leu Asn Ile
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 Leu Leu Leu Val Gly Val Lys Ile Tyr Ile Arg Gln His Asn Lys Leu
 1045 1050 1055
 Asn Lys Glu Ser Glu Tyr Asn Val Asn Ser Gln Asn Leu Ile Gly Ser
 1060 1065 1070
 Lys Ser Lys Ser Ser Lys Ile Tyr Met Val His Phe Ile Thr Ser Glu
 1075 1080 1085
 Ile Ser Phe Asn Lys Lys Lys Ile Leu Arg Pro Phe Tyr Lys Ile Gln
 1090 1095 1100
 Lys Lys Ile Asn Asn Lys Tyr Lys Arg Ile Ile Met Asn Gln Ser Ala
 1105 1110 1115 1120
 His Ile Asn Ile Lys Glu Ser Lys Asn Asn Ile Ile Ser Asn Asn Val
 1125 1130 1135
 Glu Glu Lys Asn Ser Val Thr Ser Asn Ile Val Ser Asn Ile Ser Ser
 1140 1145 1150
 Asn Asn Ile Ser Pro Tyr Tyr Lys Ser Ile Lys Glu Asn Asn Lys Met
 1155 1160 1165
 Lys Lys Thr Asn Asn Cys Ile Glu His Ile Leu Asn Asn Tyr Lys Ile
 1170 1175 1180
 Lys Tyr Asn Ile Tyr Glu Lys Ile Tyr Ile Lys Tyr Glu Thr Asn Asn
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 Asn His Met Leu Ser Phe Lys Ile Val Ile Asp Ala Glu Ser Phe Ser
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 Asp Asp Phe Phe Ser Ile Cys Ile Leu Phe Ser His Phe Ile Leu Ser
 1220 1225 1230
 Asn Ile Asn Glu Asn Ile Ile Phe Lys Ile Lys Asn Ile His Asn Gln
 1235 1240 1245
 Asn Ile Lys Glu Ser Thr Arg Ile Tyr His Val Val Phe Ile Leu Lys
 1250 1255 1260
 Leu Phe Phe His Asn Leu Leu Phe Ile Ser Cys Thr Asn Asn Ser Ile
 1265 1270 1275 1280
 Tyr Ile Thr Lys Met Leu His Pro Leu Gln Asn Ile Gln Phe Tyr Arg
 1285 1290 1295
 Tyr Lys Lys Asn Ile Arg Thr Asn Asn Gln Lys Ile Tyr Asn Thr Asn
 1300 1305 1310
 Tyr Ile His Asn Lys Tyr Glu Lys Ile Gln Asn Phe Val Asn Asn Ser
 1315 1320 1325
 Lys Tyr Val Ile Asn Asp Met Gln Ser Leu Tyr Leu Tyr Val Asp Thr

1330	1335	1340
Gln Asn Asp His Arg Ile Ile Phe Met Ser Thr Ile Leu Ser Leu Ile 1345	1350	1355 1360
Phe Lys Asn Ile Ile Ile Pro Lys Cys Asp Asn Val His Lys Ser Phe 1365	1370	1375
Pro Leu Phe Phe His Tyr Ala Lys Lys Tyr Leu His Ile Tyr Val Gln 1380	1385	1390
Asn Gly Ser Asn Gln Phe Ile Asn Thr Tyr Asn Phe Gln Asp Val Asn 1395	1400	1405
Asn Ile Asn Leu Leu His Cys Thr Lys Lys Lys Arg Pro Gln Arg Gly 1410	1415	1420
Ser Thr Pro Asp Glu Lys Tyr Lys Gly Gly Glu Ile Lys Gly Asn Asp 1425	1430	1435 1440
Ile Ile Lys Glu Ser Asp Ile Ile Lys Cys Asn Asp Ile Ile Lys Glu 1445	1450	1455
Ser Asp Val Val Asn Lys Asn Glu Ile Val Glu Asn Met Asn Ile Ile 1460	1465	1470
Ile Glu Lys Asp Glu Ile Lys Thr Asp Lys Tyr Thr Glu Pro Ile Lys 1475	1480	1485
Tyr Asp Asn Thr Ser Asp Ala Lys Ser Ile Ser Thr Ser Thr Ser Val 1490	1495	1500
Leu Ser Ser Glu Ser Ser Asn Glu Leu Ser Asp Cys Cys Met Asn Lys 1505	1510	1515 1520
Leu Thr Lys Glu Asn Met Glu Met Asn Asn Val Ile Ile Thr Lys Asn 1525	1530	1535
Asn Asn Asn Asp Asn Asn Asn Glu Asn Asn Glu Asn Asn Glu Asn Asn 1540	1545	1550
Asp Asn Asn Glu Asn Asn Glu Asn Asn Asp Asn Asn Asn Asn Asn 1555	1560	1565
Asn Asn Asn Asn Val Glu Val Tyr Lys Pro Asn Tyr Lys Ile Asn Gly 1570	1575	1580
Leu Gln Asn Ile Ile Asn Ser Cys Leu Asn Phe Ile Cys Ser Lys Arg 1585	1590	1595 1600
Lys Asn Ile Lys Asn Lys Ile Lys Asn Lys Ile Ile Lys His Lys Lys 1605	1610	1615
Asn Lys Ile Ile Asn His Lys Lys Lys Lys Lys Asn Cys Asn Thr Arg 1620	1625	1630
His Arg Gly Asn Thr Gln Ile Asn Asn Lys Leu Val Leu Ile Asn Ile 1635	1640	1645
Thr Pro Tyr Ile Leu Arg Tyr Pro Asn Asn Asn Lys Ser Ser Lys Lys 1650	1655	1660
Leu Ser Cys Thr Lys Glu Ile Lys Lys Lys Thr Phe Pro Arg Ile Cys 1665	1670	1675 1680
Glu Ser Tyr Asp Ile Lys Lys Asn Ile Asp Ile His Asn Val Asn Lys 1685	1690	1695
Lys Asn Tyr Lys Lys Ile Asp Asp Thr Leu Asn Val His Lys Glu Glu 1700	1705	1710

Ile Asp Thr Ser Lys Gln His Thr Asp Glu Lys Ile Cys Lys Lys Ile
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 Gln Lys Tyr Leu Tyr Leu Asp Val Lys Arg Lys Arg Tyr Ile Ser Leu
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 Tyr Met Tyr Asn Lys Lys Lys Gly Lys Asp Thr Asn Asn Lys Asn Ile
 1745 1750 1755 1760
 Gln Lys Lys Lys Lys Lys Glu Glu Glu Lys Lys Gln Ile Ser Tyr Asn
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 1780 1785 1790
 Asn Ile Ile Asp Met Tyr Lys Arg Asn Asn Phe Ile Tyr Lys Asp Asp
 1795 1800 1805
 Asn Tyr Lys Arg Ile Tyr Thr Tyr Asp Glu Ile Leu Glu Asn Asp Ile
 1810 1815 1820
 Asn Ile Ser Tyr Leu Ile Lys Gln Ile Asn Ile Leu Asn Val Thr Ile
 1825 1830 1835 1840
 Ile Cys Gly Met Arg Asn Val Gly Lys Thr Phe Leu Ser Lys Lys Ile
 1845 1850 1855
 Glu Asn Asn Ile Ile Ile Asp Ile Asp Glu Tyr Ile Leu Lys Asp Glu
 1860 1865 1870
 Ile Lys Phe Asp Lys Leu Ser Ile Ser Asp Phe Arg Tyr Tyr Glu Tyr
 1875 1880 1885
 Val Thr Phe Ile Ser Ser Leu Tyr Leu Ala Phe Tyr Ile Leu Thr Phe
 1890 1895 1900
 Asp Arg Asn Leu Ser Ala Pro Lys Asp Gln Thr Gly Ala Thr Ile Lys
 1905 1910 1915 1920
 His Val Asp Ile Arg Asp Glu Lys Ile Asn Ser Lys Asn Gln Asn Lys
 1925 1930 1935
 Gln Thr Glu Tyr Asp Asn Asp Ile Asn Asp Asn Asn Asn Tyr Asn Asn
 1940 1945 1950
 Ser Asp Asn His Asn Leu Leu His Asn Asn Lys Asp Asn Gln His Thr
 1955 1960 1965
 Ser Thr Lys Lys Lys Ile Gln Lys Lys Val Ser Phe Ser Asp Val Cys
 1970 1975 1980
 Glu Ile Tyr Val Asp Gly Pro Asn Phe Glu Asn Lys Asn Tyr Asp Asp
 1985 1990 1995 2000
 Asn Ile Phe Tyr Thr Tyr Thr Asn Lys Gly Ile Thr Phe Tyr Asn Lys
 2005 2010 2015
 Lys Ile Asn Asp Leu Phe Cys Lys Leu Arg Lys Lys Cys Ile Gln Glu
 2020 2025 2030
 Lys Gln Asn Gly Glu His Gln Met Thr Asn Val Thr Ile Val Leu Gly
 2035 2040 2045
 Gly Gly Ile Ile Glu Phe Asp Lys Ser Lys Glu Val Leu Lys Lys Leu
 2050 2055 2060
 Lys Asn Thr Ile Leu Ile Lys Arg Asp Ile Asp Glu Ile Tyr Asp Ile
 2065 2070 2075 2080

Cys Ile Asn Asp Asn Ile Lys Pro Lys Leu Asn Gly Asn Ile Lys Asp
 2085 2090 2095
 Ile Ile His Arg Arg Thr Ile Leu Tyr Asp Lys Leu Ser Asn Ala Phe
 2100 2105 2110
 His Phe Ile Ile Pro Ser Glu Asn Met Ile Asn Lys Tyr Ile Arg His
 2115 2120 2125
 Ser Glu Tyr Asn Lys Tyr Ile Asn Arg Asn Glu Leu Ile Val His Ser
 2130 2135 2140
 Phe Leu Arg Phe Phe Asn Tyr Pro Phe Phe Lys Lys Pro Leu Ile Gly
 2145 2150 2155 2160
 Asp Ile Ile Thr Asn Tyr Lys Ile Asp Lys Asn Glu Lys Asn Asp Glu
 2165 2170 2175
 Lys Asn Asp Glu Lys Asn Asp Glu Lys Asn Asn Glu Lys Asn Asp Glu
 2180 2185 2190
 Lys Asn Gly Asp Asn Asn Asp Asp Asn Asn Asp Asn Asn Asn Glu Asp
 2195 2200 2205
 Glu Asn Asn Lys Lys Lys Lys Lys Lys Lys Lys Asn Asp Cys Asn His
 2210 2215 2220
 Asn His Ile Asn Asn Tyr Tyr Arg Val Leu Tyr Ile Asn Leu Asn Asn
 2225 2230 2235 2240
 Leu Arg His Phe Pro Tyr Met Asn Leu Leu Lys Glu Asp Tyr Asp Ile
 2245 2250 2255
 Ile His Ile Lys Ile Tyr Lys Tyr Glu Gln Ile Lys Leu Leu Glu Leu
 2260 2265 2270
 Ala Ile Phe Leu Ile Arg Ser Cys Thr Cys Lys Glu Tyr Lys Ile Ile
 2275 2280 2285
 Val Lys Leu Tyr Pro Gln Tyr Phe Phe Thr Tyr Gln Glu Tyr Ile Ile
 2290 2295 2300
 Lys Lys Lys Lys His Lys Lys Lys Ser Leu Lys Asn Lys Lys Lys Ser
 2305 2310 2315 2320
 Asn Lys Lys Tyr Glu Phe Asp Asn Tyr Ile Cys Glu Asn Ile Leu His
 2325 2330 2335
 Ile Phe Tyr Lys Tyr Lys Ile Asn Ile Phe Glu Leu Asp Asn His Phe
 2340 2345 2350
 Leu Lys Val Ala Lys Lys Ile Leu Ser Tyr Lys Lys Glu Asn Ile Phe
 2355 2360 2365
 Phe Ile Ile Ser Lys Lys Glu Lys Ile Ile Asn Lys Leu Lys Ile Gln
 2370 2375 2380
 Ser Asp Leu Tyr Lys Leu Asn Ile Trp Gln Ala Asp Ile Ile Lys Leu
 2385 2390 2395 2400
 Ser Ser Ser Asn Gln Ile Ser Leu Thr Glu Cys Asn Leu Leu Glu Asn
 2405 2410 2415
 Ile Leu Tyr Asp Phe Tyr Val Asp Thr Ile Asn Gln Pro Ala Asn Thr
 2420 2425 2430
 Leu Leu Phe Glu Lys Arg Leu His Asn Asn Asp Lys Asn Glu Gln Thr
 2435 2440 2445
 His Ile Leu Tyr Tyr Asn Ala Thr Asp Lys Cys Leu Phe Ser Phe Leu

105

245								250				255			
Thr	Asn	Asn	Met	Thr	Ser	Ser	Met	Thr	Asn	Asn	Met	Ala	Ser	Gly	Met
260								265				270			
Thr	Ser	Ser	Met	Thr	Asn	Asn	Met	Ala	Ser	Gly	Met	Thr	Ser	Ser	Ile
275				280								285			
Thr	Asn	Asn	Met	Thr	Ser	Ser	Met	Thr	Asn	Asn	Met	Ala	Ser	Gly	Met
290				295				300							
Thr	Ser	Ser	Ile	Thr	Asn	Asn	Met	Thr	Ser	Ser	Met	Thr	Asn	Asn	Met
305				310				315				320			
Ala	Ser	Ser	Met	Thr	Ser	Ser	Met	Thr	Asn	Asn	Met	Thr	Ser	Ser	Met
325								330				335			
Thr	Asn	Asn	Met	Thr	Ser	Ser	Met	Thr	Asn	Asn	Met	Leu	Asn	Asn	Met
340								345				350			
Asn	Arg	Val	Val	Thr	Asn	Asn	Ile	Ile	Thr	Asn	Met	Asn	Arg	Ser	Val
355				360				365							
Ser	Gly	Ser	Lys	Ser	Ile	Asn	Met	Ser	Asn	Leu	Leu	Ile	Ile	Asn	Lys
370				375				380							
Met	Asp	Tyr	Gly	Asn	Asp	Ile	Tyr	His	Asn	Asn	Asn	Asn	Asn	Asn	Asn
385				390				395				400			
Asn	Ser	Ser	Ser	Gly	Ser	Asn	Ile	Val	Ser	Gly	Lys	Tyr	Phe	Val	Asn
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Ser	Gln	Asn	Ser	Ser	Lys	Asn	Asn	Phe	Phe	Thr	Lys	Val	Gly	Glu	Ser
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Thr	Ile	Arg	Ser	Pro	Thr	Asn	Ile	Leu	Asp	Ile	Tyr	Lys	Gln	Gly	Asn
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Met	Tyr	Met	His	Ile	Pro	Lys	Asn	Ala	Asp	Leu	Met	Asn	Asn	Val	Ser
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Ser	Tyr	Ser	Ile	Ala	His	Glu	Asn	Tyr	Ile	Lys	Arg	Asp	Asn	Thr	Asn
465				470				475				480			
Val	Thr	His	Val	Leu	Asn	Asn	Asn	His	Leu	Val	Asn	Ile	Asn	Asn	Val
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Val	Asn	Asn	Asn	Asn	Leu	Asn	Asn	Asn	Asn	Asn	Leu	Asn	Asn	Asn	Asn
500				505				510							
Asn	Leu	Asn	Ser	Asn	Asn	Asn	Leu	Asn	Ser	Asn	Asn	Asn	Leu	Asn	Asn
515				520				525							
Asn	Asn	Asn	Leu	Ile	Asn	Asn	Asn	Asn	Leu	Ile	Asn	Asn	Asn	Tyr	Val
530				535				540							
Arg	Asn	Asn	Gln	Ala	Val	Asn	Asn	Ala	His	Thr	Leu	Asn	Ala	His	Phe
545				550				555				560			
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580				585				590							
Ile	Asn	Asp	Leu	Ser	Val	Leu	Ile	Asn	Lys	Asn	Lys	Pro	Ile	His	His
595				600				605							
Val	Ile	Asn	Gly	Thr	Glu	Val	Gln	Gln	Lys	Arg	Ser	Leu	Ser	Asn	Val
610				615				620							

Gln 625	Lys	Leu	Lys	Thr	Leu 630	Asn	Thr	Phe	Pro	Asn 635	Ala	Lys	Gly	Arg	Phe 640
Ser	Leu	Ile	Asn 645	Lys	Met	Ala	Ser	Met	Pro 650	Asn	Met	Ser	Thr	Thr	Ser 655
Ser	Met	Asn	Met 660	Ser	Gly	Leu	Asn	Thr 665	Ser	Ser	Ser	Glu	Gly 670	Leu	Thr
Asn	Ile	Ile 675	Asn	Met	Asn	Asn	Ile 680	Asn	Ser	Val	Asn	Asn	Ile	Asn	Ser
Val 690	Asn	Asn	Ile	Asn	Ser	Val 695	Asn	Asn	Ile	Asn	Ser 700	Val	Asn	Asn	Leu
Asn 705	Ser	Val	Asn	Asn	Ile 710	Asn	Ser	Val	Asn	Asn 715	Ile	Asn	Ser	Val	Asn 720
Asn	Ile	Asn	Ser	Val 725	Asn	Asn	Ile	Asn	Ser 730	Val	Asn	Asn	Ile	Asn	Ser 735
Val	Asn	Asn	Ile 740	Asn	Ser	Val	Asn	Asn 745	Leu	Asn	Ser	Val	Asn	Asn	Ile 750
Asn	Ser	Val	Asn	Asn	Ile	Asn	Asn 760	Ile	Asn	Tyr	Ile	Asn	Asn	Ile	Asn 765
Tyr 770	Val	Asn	Met	Asn	Lys	Gly 775	Leu	Asn	Pro	Ile	Asn 780	Asn	Val	Ser	Asn
Ile 785	Ser	Ser	Leu	Lys	Leu 790	Leu	Asn	Asn	Asn	Asn 795	Asp	Ile	Lys	Lys	Lys 800
Phe	Asn	Thr	Tyr	Gly 805	Lys	Ser	Glu	Ala	Ser 810	Glu	Asn	Leu	Ser	Lys	Asn 815
Val	Lys	Tyr	Ile 820	Lys	Tyr	Ile	Gln	Glu 825	Asn	Ile	Lys	Tyr	Leu	Asn	Asn 830
Leu	Asp	Asp 835	Asn	Lys	Arg	Lys	Tyr 840	Ser	Leu	Thr	Ser	Ile 845	Asn	Asp	Val
Gly 850	Cys	Ile	Lys	Lys	Lys	Lys 855	Asn	Met	Asn	Asp	Leu 860	Phe	Leu	Gly	Lys
His 865	Asp	Asn	Met	Leu	Arg 870	Thr	Asp	Glu	Ile	Pro 875	Lys	Ile	Asn	Leu	Gly 880
Lys	Asn	Ile	Leu	Asn 885	Asn	Asn	Lys	Ile	Ile 890	Asn	Tyr	Asn	Asp	Asn	Asp 895
Lys	Ser	Asn 900	Ile	Ile	Asn	Asn	Val 905	Ile	Asn	Lys	Asn	Ile	Ser	Thr	Asp 910
Leu	Val 915	Asn	Asp	Arg	Glu	Gly	Asp 920	Met	Asn	Lys	Met	Asn	Ile	His	Asn 925
Arg 930	Glu	Lys	Asp	Glu	Asn	Asn 935	Tyr	Ile	Asn	Ile	Gly 940	Asp	Asn	Lys	Ile
Lys 945	Lys	Asn	Gln	Ile	Asp 950	Val	Val	Asn	Asn	Lys 955	Val	Met	Lys	Leu	Asp 960
Asn	Met	Glu	Asp	Glu 965	Glu	Ala	Met	Asn	Lys 970	Leu	Ser	Leu	Ile	Ser	Leu 975
Tyr	Pro	Asn 980	Asn	Asn	His	Ile	Ile 985	Asn	Asn	Val	Asn	Asn	Val	Asn	Asn 990

Val Asn Asn Val Asn Asn Val Asn Asn Val Asn Asn Val Asn Asn Val
 995 1000 1005

Asn Asn Val Asn Asn Val Asn Asn Val Asn Tyr Met Asn Asn Met Asn
 1010 1015 1020

Asn Val Asn Asn Val Asn Asn Met Asn Asn Val Asn Asn Met Asn Asn
 1025 1030 1035 1040

Val Asn Asn Val Asn Ser Val Asn Asn Ile Lys Gly Ile Asn Asn Met
 1045 1050 1055

Asn Asn Asn Asn Asn Ile Asn Met Asn Arg Ser Tyr Lys Met Asn
 1060 1065 1070

Met Lys Lys Val Ser Lys Lys Asp Asn Gly Gln Asn Val Val Ser Glu
 1075 1080 1085

Lys Arg Phe Ser Glu Glu Lys Tyr Asn Phe Leu Lys Asn Leu Ile Arg
 1090 1095 1100

Asn Asn Lys Asn Met Val Lys Leu Lys Tyr Leu Asn Lys Phe Leu Gly
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Lys Arg Ser Gly Pro Ser Ile Lys Asn Asn Met Asn Asp Met Met Val
 1125 1130 1135

Lys Met Asn Asn Asn Met Lys Asp Ile Met His Ile Lys Asp Ala Thr
 1140 1145 1150

Asn Ile Asn Lys Ile Asn Asn Lys Leu Val Asn Leu Asn Thr Asn Asn
 1155 1160 1165

Cys Ile Ser Tyr Asn Ser Cys Asn Lys Met Asn Tyr Ile His Lys Cys
 1170 1175 1180

Lys Lys Lys Arg Val Leu Cys Leu Asp Thr Lys His Gly Lys Asn Glu
 1185 1190 1195 1200

Ile Lys Gln Asn Glu Lys Leu Ile Tyr Thr Asn Tyr Glu Ile Lys Met
 1205 1210 1215

Phe Leu Leu Asn Thr Ile Lys Ala Ile Gly Ile Val Phe Lys Lys Trp
 1220 1225 1230

Lys Phe Lys Asn Phe Gly Leu Tyr Phe Trp Tyr His Ile Lys Cys Ile
 1235 1240 1245

Glu Asn Glu Arg Asp Leu Asn Phe Tyr Ile Lys Ile Phe Asn Phe Leu
 1250 1255 1260

Phe Glu Ile Ile Thr Gly Lys Asn Ile Tyr Tyr Gln Ile Asn Asp Ile
 1265 1270 1275 1280

His Asn Ile Val Ala Leu Phe Lys Glu Phe Lys Ile Tyr Asp Cys Lys
 1285 1290 1295

His Val Leu Lys Lys Ser Ile Lys Val Leu Asn Lys Tyr Ala Lys Lys
 1300 1305 1310

Asn Ser Lys Glu Phe Ser Leu Phe Glu Asn Asn Gln His Val Val Leu
 1315 1320 1325

Asp Ile Asn Lys His Met Leu Phe Asn Asp Asp Glu Lys Lys Leu Thr
 1330 1335 1340

Thr Cys Asn Ile Lys Gln Asn Glu Gln Glu Gln Ile Lys Thr Lys Val
 1345 1350 1355 1360

Leu Tyr Asp His Asp Asn Ile Asn Val Asp Thr Lys Gln Asn Tyr Gln

1365

1370

1375

Lys Ile Ile Thr Asn Lys Asn Asn His Pro Lys Asp Asn Phe Tyr Ser
 1380 1385 1390

Tyr Leu Tyr Asp Ser Leu Gln Gly Lys Asn His Ile Phe Gln Gln Pro
 1395 1400 1405

Gly Val Gln Asn Met His Ile Tyr Asn Met Phe Ala Gln Phe Asn Glu
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 1425 1430 1435

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<400> 57
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Glu Lys Gly Val Tyr Phe Tyr Cys Lys Ser Cys Asn Tyr Lys Tyr Lys
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Ile Lys Asn Lys Ile Tyr Asn Lys Phe Asp Cys Gln Gln Phe Asn Lys
 35 40 45

Thr Ile Pro Leu Asp Ala Val Asp Ile Asn Asn Lys Asn Met Ser Lys
 50 55 60

Thr Gln Ala Val Cys Pro Lys Cys Thr Asn Asp Glu Ala Tyr Phe Tyr
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Thr Leu Gln Ile Arg Ser Ala Asp Glu Pro Ser Thr Ile Phe Tyr Ile
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Cys Val Lys Cys Asn Tyr His Trp Lys Glu
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Ala Leu Ile Lys Tyr Arg Ile Ile Val Glu Ile Lys Trp Leu Leu Phe
 35 40 45

Leu Asn Asp Lys Glu Tyr Phe Phe Pro Lys Val Ser Glu Lys Ser Leu
 50 55 60

Ser Asn Ile Thr Ser Ile Met Glu Leu Ile Asn Asp Asn Asp Ile Leu
 65 70 75 80

Arg Val Lys Lys Ile Glu Glu Glu Thr Asn His Asp Val Lys Ala Val
 85 90 95

Glu Tyr Phe Ile Arg Glu Lys Leu Glu Ser Leu Lys Asn Glu Glu Ile
 100 105 110

Thr Lys Val Ile Pro Tyr Val His Tyr Leu Cys Thr Ser Glu Asp Ile
 115 120 125
 Asn Asn Ile Ala Tyr Gly Leu Cys Leu Tyr Asn Cys Ile His Asn Ile
 130 135 140
 Ile Ile Pro Asn Ile Gln Asn Ile Ile Asp Lys Leu Lys Glu Phe Ser
 145 150 155 160
 Phe Asn Tyr Ser Asp Val Ser Leu Leu Ser Lys Thr His Gly Gln Pro
 165 170 175
 Ala Ser Pro Thr Thr Phe Gly Lys Glu Met Ser Asn Tyr Tyr Tyr Arg
 180 185 190
 Leu Tyr Lys His Ile Asn Lys Leu Lys Asn Ile Glu Ile Tyr Val Lys
 195 200 205
 Phe Asn Gly Ala Val Gly Asn Phe Asn Ala His Lys Val Cys Asp Pro
 210 215 220
 Asn Ile Asp Trp Ile Asp Asn Ile Lys Tyr Phe Ile Glu Thr Tyr Phe
 225 230 235 240
 Asn Leu His Phe Ser Leu Tyr Cys Thr Gln Ile Gln Asp His Asp Tyr
 245 250 255
 Ile Cys Glu Ile Ser Asp Thr Leu Ala Arg Leu Asn Tyr Thr Leu Ile
 260 265 270
 Asp Leu Ser Val Asp Met Trp Leu Tyr Ile Ser Ser Asn Val Leu Lys
 275 280 285
 Leu Lys Val Ile Gln Lys Glu Ile Gly Ser Ser Thr Met Pro His Lys
 290 295 300
 Val Asn Pro Ile Asp Phe Glu Asn Ala Glu Gly Asn Leu His Leu Ala
 305 310 315 320
 Asn Ser Leu Phe Lys Leu Phe Ser Ser Lys Leu Pro Ile Ser Arg Leu
 325 330 335
 Gln Arg Asp Leu Ser Asp Ser Thr Val Leu Arg Asn Leu Gly Ser Ser
 340 345 350
 Phe Ala Tyr Ser Leu Ile Ser Tyr Lys Ser Leu Leu Arg Gly Leu Asn
 355 360 365
 Lys Ile Asp Val Asp Gln Asn Val Met Asn Glu Gln Leu Asn Gln Asn
 370 375 380
 Trp Cys Thr Leu Ala Glu Pro Ile Gln Ile Ile Met Lys Lys Tyr Asn
 385 390 395 400
 Ile Ala Asp Ser Tyr Glu Gln Leu Lys Asn Phe Thr Arg Gly Lys Ser
 405 410 415
 Ile Asp Lys Gln Cys Met Tyr Gln Phe Ile Gln Gln Asn Cys Ser His
 420 425 430
 Leu Pro Lys Asn Ala Ile Asp Glu Leu Met Asn Leu Thr Pro His Asn
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 Tyr Leu Gly Tyr Ala Ser Tyr Leu Ser Lys Asn Val Glu His Phe Ser
 450 455 460
 Gln Glu Tyr Ile Lys Lys Asn
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 Asn Ala Tyr Asn Met Ser Ile Arg Arg Ser Met Ala Glu Ser Lys Pro
 35 40 45
 Ser Thr Gly Ala Gly Gly Ser Ala Gly Gly Ser Ala Gly Gly Ser Ala
 50 55 60
 Gly Gly Ser Ala Gly Gly Ser Ala Gly Gly Ser Ala Gly Ser Gly Asp
 65 70 75 80
 Gly Asn Gly Ala Asp Ala Glu Gly Ser Ser Ser Thr Pro Ala Thr Thr
 85 90 95
 Thr Thr Thr Lys Thr Thr Thr Thr Thr Thr Thr Thr Thr Asn Asp Ala Glu
 100 105 110
 Ala Ser Thr Ser Thr Ser Ser Glu Asn Pro Asn His Lys Asn Ala Glu
 115 120 125
 Thr Asn Pro Lys Gly Lys Gly Glu Val Gln Glu Pro Asn Gln Ala Asn
 130 135 140
 Lys Glu Thr Gln Asn Asn Ser Asn Val Gln Gln Asp Ser Gln Thr Lys
 145 150 155 160
 Ser Asn Val Pro Pro Thr Gln Asp Ala Asp Thr Lys Ser Pro Thr Ala
 165 170 175
 Gln Pro Glu Gln Ala Glu Asn Ser Ala Pro Thr Ala Glu Gln Thr Glu
 180 185 190
 Ser Pro Glu Leu Gln Ser Ala Pro Glu Asn Lys Gly Thr Gly Gln His
 195 200 205
 Gly His Met His Gly Ser Arg Asn Asn His Pro Gln Asn Thr Ser Asp
 210 215 220
 Ser Gln Lys Glu Cys Thr Asp Gly Asn Lys Glu Asn Cys Gly Ala Ala
 225 230 235 240
 Thr Ser Leu Leu Asn Asn Ser Ser Asn Ile Ala Ser Ile Asn Lys Phe
 245 250 255
 Val Val Leu Ile Ser Ala Thr Leu Val Leu Ser Phe Ala Ile Phe Ile
 260 265 270

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 Arg Leu Met Asn Asp Glu Lys Gly Glu Gly Gly Phe Thr Ser Lys Asn
 35 40 45
 Lys Glu Asn Gly Asn Asn Asn Arg Asn Asn Glu Asn Glu Leu Lys Glu
 50 55 60
 Glu Gly Ser Leu Pro Thr Lys Met Asn Glu Lys Asn Ser Asn Ser Ser
 65 70 75 80
 Asp Lys Gln Pro Asn Asp Ile Ser His Asp Glu Ser Lys Ser Asn Ser
 85 90 95
 Asn Asn Ser Gln Asn Ile Gln Lys Glu Pro Glu Glu Lys Glu Asn Ser
 100 105 110
 Asn Pro Asn Leu Asp Ser Ser Glu Asn Ser Ser Glu Ser Ala Thr Arg
 115 120 125
 Ser Val Asp Ile Ser Glu His Asn Ser Asn Asn Pro Glu Thr Lys Glu
 130 135 140
 Glu Asn Gly Glu Glu Pro Leu Asp Leu Glu Ile Asn Glu Asn Ala Glu
 145 150 155 160
 Ile Gly Gln Glu Pro Pro Asn Arg Leu His Phe Asp Asn Val Asp Asp
 165 170 175
 Glu Val Pro His Tyr Ser Ala Leu Arg Tyr Asn Lys Val Glu Lys Asn
 180 185 190
 Val Thr Asp Glu Met Leu Leu Tyr Asn Met Met Ser Asp Gln Asn Arg
 195 200 205
 Lys Ser Cys Ala Ile Asn Asn Gly Gly Cys Ser Asp Asp Gln Ile Cys
 210 215 220
 Ile Asn Ile Asn Asn Ile Gly Val Lys Cys Ile Cys Lys Asp Gly Tyr
 225 230 235 240
 Leu Leu Gly Thr Lys Cys Ile Ile Leu Asn Ser Tyr Ser Cys His Pro
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 Phe Phe Ser Ile Leu Ile Tyr Ile Thr Leu Phe Leu Leu Leu Phe Val
 260 265 270

<210> 61
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 Met Trp Ile Val Lys Phe Leu Ile Val Val His Phe Phe Ile Ile Cys
 1 5 10 15
 Thr Ile Asn Phe Asp Lys Leu Tyr Ile Ser Tyr Ser Tyr Asn Ile Val
 20 25 30
 Pro Glu Asn Gly Arg Met Leu Asn Met Arg Ile Leu Gly Glu Glu Lys
 35 40 45
 Pro Asn Val Asp Gly Val Ser Thr Ser Asn Thr Pro Gly Gly Asn Glu
 50 55 60

Ser Ser Ser Ala Ser Pro Asn Leu Ser Asp Ala Ala Glu Lys Lys Asp
 65 70 75 80
 Glu Lys Glu Ala Ser Glu Gln Gly Glu Glu Ser His Lys Lys Glu Asn
 85 90 95
 Ser Gln Glu Ser Ala Asn Gly Lys Asp Asp Val Lys Glu Glu Lys Lys
 100 105 110
 Thr Asn Glu Lys Lys Asp Asp Gly Lys Thr Asp Lys Val Gln Glu Lys
 115 120 125
 Val Leu Glu Lys Ser Pro Lys Glu Ser Gln Met Val Asp Asp Lys Lys
 130 135 140
 Lys Thr Glu Ala Ile Pro Lys Lys Val Val Gln Pro Ser Ser Ser Asn
 145 150 155 160
 Ser Gly Gly His Val Gly Glu Glu Glu Asp His Asn Glu Gly Glu Gly
 165 170 175
 Glu His Glu Glu Glu Glu His Glu Glu Asp Asp Asp Asp Glu Asp
 180 185 190
 Asp Asp Thr Tyr Asn Lys Asp Asp Leu Glu Asp Glu Asp Leu Cys Lys
 195 200 205
 His Asn Asn Gly Gly Cys Gly Asp Asp Lys Leu Cys Glu Tyr Val Gly
 210 215 220
 Asn Arg Arg Val Lys Cys Lys Cys Lys Glu Gly Tyr Lys Leu Glu Gly
 225 230 235 240
 Ile Glu Cys Val Glu Leu Leu Ser Leu Ala Ser Ser Ser Leu Asn Leu
 245 250 255
 Ile Phe Asn Ser Phe Ile Thr Ile Phe Val Val Ile Leu Leu Ile Asn
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 <213> Plasmodium falciparum

<400> 62
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 35 40 45
 Asn Asn Val Asp Lys Ile Pro Asn Lys Lys Glu Ile Ile Tyr Asn Asn
 50 55 60
 Ile Lys Ser Asn Asn Ile Gln Val Arg Val Asn Gln Asn Asn Asn Glu
 65 70 75 80
 Glu Lys Lys Lys Glu Glu Ala Asn Tyr Thr Cys Val Asn Asn Lys Tyr
 85 90 95
 Val Thr Leu Lys Asn Lys Val His Val Asn Lys Tyr Val Asn Asn Ser
 100 105 110

Asn Ile Asn Lys Ile Lys Ile Val Pro Ile Ile Lys Cys Ser Asn Tyr
 115 120 125
 Lys Ile Lys Asn Asn Pro Ile Ser His Leu Lys Ser Asn Tyr Glu Asn
 130 135 140
 Lys Phe Val Lys Leu Ser Asn Phe Ser Asn Ile Lys Asn Gly Cys Ser
 145 150 155 160
 His Lys Asp Asn Val Ile Asn Glu Thr Met Asp Gln His Lys Ser Glu
 165 170 175
 Gln Leu Asn Asn Asp Asn Ile Lys Lys Leu Leu Tyr Asp Tyr Cys Ile
 180 185 190
 Phe Arg Glu Asp Thr Ile Lys Thr Lys Thr Asn Ile Ser Tyr Asn Lys
 195 200 205
 Met Asn Ser Phe Lys Asp Asn Glu Glu Asn Ile Asn Tyr Met Asp Asn
 210 215 220
 Asn Asn Ile Lys Ser Asn Ser Ser Ser Tyr Cys Ser Tyr Ser Asn Lys
 225 230 235 240
 Ile Asn Gln Asn Asn Val Asn His Thr His Leu Lys Thr Glu Phe Leu
 245 250 255
 Asn Glu Lys Asn Ser His Thr Gln Asn Glu Gln Ser Ile Pro Leu Leu
 260 265 270
 Asp Gly Leu Gln Asn Asn His Asn Ser Ala Thr Lys Phe His Asn Asn
 275 280 285
 Ile Tyr Asp Asn Asn Asn Ser Leu Val Asn Tyr Lys Ser Asp Lys Gly
 290 295 300
 Ile Asp Leu His Asn Lys Met Met Lys Ile Glu Thr Asp Lys Asn Gly
 305 310 315 320
 Ile Ile Thr Leu Glu Lys Lys Lys His Asp Glu Lys Tyr Tyr Asn Asn
 325 330 335
 Ile Phe Leu Asn Pro Leu Asn Asp Asn Ser Asn Asn Val Val Ile Thr
 340 345 350
 Thr Cys Asp Asn Lys Glu Ser Tyr Arg Asn Ser Thr Ser Asp Met Ile
 355 360 365
 Asn Lys Ile Phe Glu Lys Met Met Asn Glu Lys Lys Asn Ile Leu Lys
 370 375 380
 Met Lys Asn Phe Asn Asp Val Ile Lys Lys Lys Ile Thr Met Ala Lys
 385 390 395 400
 Glu Lys Ile Leu Asn Ser Asn Ser Thr Ile Asn Met Lys Lys Val Ser
 405 410 415
 Phe Tyr Asn Ser Lys Asp Glu Asp Leu Phe Asn Glu Lys Glu Asn Ser
 420 425 430
 Tyr Lys Tyr Gly Val Lys Arg Glu Asn Gln Glu Asp Ile Asn Val Ile
 435 440 445
 Lys Asn Asn Met Lys Arg Asn Asn Ile Asn Ile Asp Asn Asn Asp Asn
 450 455 460
 Ile Asn Ile Ile Lys Asn Asp Ser Val Ser Lys Asn Ile His Ile Asn
 465 470 475 480
 Asn Lys Lys Lys Arg Asp Asp Asp Phe Pro Phe Asn Asn Ser Ala Gly
 485 490 495 500

485										490					495				
Leu	Leu	Leu	Asp	Phe	Asp	Leu	Cys	Lys	Arg	Lys	Val	Leu	Glu	Ile	Leu				
			500					505					510						
Lys	Asn	Val	Gln	Ser	Ser	Lys	Lys	Lys	Asn	Lys	Ile	Leu	Thr	Asn	His				
		515					520					525							
Asn	His	Ser	Ser	Asp	Asn	Gln	Asn	Cys	His	Ser	Ser	Asp	Asn	Gln	Asn				
	530					535					540								
Cys	His	Ser	Ser	Asp	Asn	Gln	Asn	Cys	His	Ser	Ser	Asp	Asn	Gln	Asn				
545					550					555					560				
Cys	His	Ser	Ser	Asp	Asn	Gln	Asn	Cys	Asp	Ser	Asn	Ala	Cys	Asn	Lys				
				565					570					575					
Lys	Asp	Glu	Glu	Lys	Lys	Arg	Lys	Lys	Lys	Lys	Ile	Lys	Lys	Lys	Asn				
			580					585					590						
Lys	Met	Lys	Asn	Lys	Ser	Asn	Asn	Lys	Ser	Lys	Asn	Lys	Arg	Glu	Thr				
		595					600					605							
Lys	Ser	Lys	Lys	Ile	Ser	Asn	Asn	Asn	Asn	Asn	Asp	Asn	Met	Asn	Asn				
	610					615					620								
Gln	Cys	Asp	Asn	Met	Gly	Asp	Gln	Arg	Ile	Asn	Asn	Glu	Asn	Met	Asp				
625					630					635					640				
Lys	Gln	Asn	Val	Asn	Ile	Gln	Asn	Glu	Gly	Asn	Gly	Phe	Asn	Asn	Asn				
				645					650					655					
Lys	Asn	Asn	Asn	Asp	Leu	Leu	Asn	Val	Tyr	Ile	Ser	Pro	Asn	Met	Ile				
			660					665					670						
Asn	His	Ser	Leu	Ser	Ser	Thr	Cys	Glu	Lys	Lys	Asn	Lys	Glu	Asp	Asn				
		675					680					685							
Lys	Met	Asn	Asp	Asn	Lys	Phe	Leu	Asn	Ser	Ser	Ser	Lys	Met	Lys	Ile				
	690					695					700								
Pro	Glu	Ile	Ser	Thr	Asn	Asn	Ser	Asn	Glu	Lys	Ile	Val	Asn	Val	Ser				
705					710					715					720				
Asn	Asp	Glu	Met	Leu	Val	Tyr	His	Asn	Leu	Thr	Val	Leu	Asn	Val	Lys				
				725					730					735					
Glu	Gln	Gly	Gly	Val	Thr	Glu	Glu	Ser	Ser	Cys	Ile	Lys	Arg	Thr	Tyr				
			740					745					750						
Phe	Val	Asp	Gln	Phe	Tyr	Asp	Ser	Tyr	Asn	Met	Arg	Asn	Glu	Lys	Ile				
		755					760					765							
Thr	Asp	Asp	Asn	Met	Gln	Val	Glu	Asp	Ile	Tyr	Asn	Val	Lys	Glu	Asn				
	770					775					780								
Ile	Lys	Arg	Thr	Leu	Lys	Gly	Asp	Gly	His	Asp	Asp	Val	Lys	Thr	Asn				
785					790					795					800				
Met	Leu	Ser	Glu	Asp	Asn	Ser	Tyr	Ala	Ser	Gly	Leu	Trp	Gly	Asn	Glu				
				805					810					815					
Ile	Asn	Phe	Ile	Ser	Asn	Asn	Glu	Asn	Cys	Leu	Asn	Ser	Tyr	Asp	Ile				
			820					825					830						
Ser	Cys	Asp	Glu	Lys	Tyr	Ile	Pro	Asn	Glu	Glu	Glu	Gln	Asp	Glu	Glu				
		835					840					845							
Leu	Cys	Ser	Asn	Asn	Ile	Leu	Val	Lys	Asp	Ile	Glu	Glu	Lys	Lys	Met				
	850					855					860								

Cys Gly Lys Leu Phe Phe Glu Glu Ile Cys Val Phe Arg Ile Asn Glu
 865 870 875 880
 Lys Asn Glu His Gly His Glu Asn Leu Arg Lys Asn Asn His Asn Asp
 885 890 895
 Asp Thr His Lys Met Tyr Ser Ser Tyr Glu Asn Ile Gln Asn Ile Asn
 900 905 910
 Lys Gln Ser Thr Asn Pro Phe Cys Lys Lys Asp Glu Met Glu Lys Ser
 915 920 925
 Gln Gly Thr Asn Leu Phe Tyr Asp Asn Tyr Ile Asn Ser Val Asp Ile
 930 935 940
 Thr Lys Leu Glu Leu Asn Lys Asn Cys Tyr Gln His Ile Asn Tyr Glu
 945 950 955 960
 Val Gln Asn Leu Ile Lys Lys Glu Asn Ser Tyr Ala Ala Glu Met Asn
 965 970 975
 Val Gly Leu Val Phe Arg Lys Tyr Ile Pro Ile Leu Ile Asn Leu Ser
 980 985 990
 Cys Asn Tyr Leu Leu Ile Lys Lys Asn Glu Lys Asn Val Ile Thr Cys
 995 1000 1005
 Ile Ser Tyr Thr Asn Ile Ile Asp Val Lys Ile Val Lys Lys Ser Lys
 1010 1015 1020
 Lys Asn Lys Glu Arg Phe Leu Phe Lys Ile Val Tyr Val Phe Lys Lys
 1025 1030 1035 1040
 Lys Glu Gln Lys Thr Glu Lys Asn Val Thr Leu Leu Phe Arg Ala Asn
 1045 1050 1055
 Leu Met Glu Ile Phe Glu Lys Ile Lys Gly Arg Val Asp Tyr Cys Ile
 1060 1065 1070
 Ile Pro Asn Glu Asp Asp Lys Asn Ile Gln Leu Gln Asp Lys Lys Lys
 1075 1080 1085
 Lys Lys Gly Lys Lys Lys Lys Glu Leu Gln Glu Glu Lys Met Lys Lys
 1090 1095 1100
 Lys Lys Lys Thr Gln Glu Tyr Val Asp Ile Glu Thr Val Tyr Glu Tyr
 1105 1110 1115 1120
 Val Ile Glu Lys Tyr Lys Arg Val His Val Leu Tyr Leu Gly Arg Leu
 1125 1130 1135
 Leu Gln Ile Val Glu Lys Leu Phe Lys Lys Tyr Ile Leu Lys Tyr Ser
 1140 1145 1150
 Phe His Lys Leu Arg Ile Phe Tyr Glu Tyr Lys Ile Glu Met Glu Lys
 1155 1160 1165
 Leu Lys Lys Asn Tyr Ile His Cys Ile Tyr Asp Ile Ser Asp Lys Leu
 1170 1175 1180
 Glu Phe Leu Ile Lys Lys Lys Met Gln His Tyr Phe Asn His Ile Ile
 1185 1190 1195 1200
 Ile Asn Ser Tyr Glu Ser Ser Phe Ile Asn Tyr Gln Ile Lys Thr Asn
 1205 1210 1215
 Asp Met Leu Tyr Asn Leu Leu Leu Lys Glu Lys Ser Ala Tyr Gln Asn
 1220 1225 1230

His Leu Gly Lys Asn Tyr Ile Leu Ile Leu Tyr Lys Val Leu Leu Ser
 1235 1240 1245
 Met Tyr Lys Lys Lys Met Ala Ile Tyr Phe Arg Ser Phe Val Tyr Asn
 1250 1255 1260
 Asn Ile Lys Val Ser Lys Lys Lys Asn Ala Phe Ala Tyr Thr Leu Thr
 1265 1270 1275 1280
 Arg Val Asn Ser Ile Leu Val Leu Tyr Glu Arg Arg Ile Lys Ser Phe
 1285 1290 1295
 Ile Phe Ser Lys Leu Lys Phe Asn Tyr Asp Asn Val Ser Tyr Phe Cys
 1300 1305 1310
 Phe Thr Met Tyr Lys Ile Tyr Leu Arg Arg Ile Leu Phe Gly Tyr Leu
 1315 1320 1325
 Arg Ile Arg Asp Asn Arg Ile Asn Ile Lys Asn Val Ile Glu Lys Asn
 1330 1335 1340
 Val Tyr Arg Leu Val Lys Leu Ile Ser Lys Ile Ser Asp Asn His Lys
 1345 1350 1355 1360
 Tyr Asn Ala Phe Leu Lys Leu Gln Lys Tyr Val Tyr Glu Gln Asn Glu
 1365 1370 1375
 Lys Lys Asn Lys Met Ile Cys Asp Asn Leu Ile Tyr Ala Asn Asn Glu
 1380 1385 1390
 Leu Cys Asn Asn Leu Asp Lys Ile Ala Ile Glu Lys Gly Ile Asn Gln
 1395 1400 1405
 Ile Asp Cys Leu Ile Lys Phe Lys Arg Lys Glu Cys Leu Met Lys Tyr
 1410 1415 1420
 Phe Tyr Thr Leu Lys Gly Pro Gln Ile Asn Thr Glu Arg Phe Tyr Tyr
 1425 1430 1435 1440
 Cys Ile Arg Tyr Cys Ser Ile Phe Ser Phe Val Leu Asn Lys Ile Ile
 1445 1450 1455
 Gln Lys Lys Val Gln His Ile Phe Phe Gln Phe Val Leu Lys Thr Leu
 1460 1465 1470
 Gln Arg Asn Asn Lys Asn Arg Leu Thr His Ala Ile Lys Leu Leu Gln
 1475 1480 1485
 Val Leu Val Gln Lys Lys Glu Lys Lys Ser Val Ile Asp Val Leu Gln
 1490 1495 1500
 Leu Tyr Asp Lys Tyr Pro Tyr Ile Phe Gln Tyr Lys Asp Leu Thr Lys
 1505 1510 1515 1520
 Ile Glu Val Phe Val Ile Cys Val Gln Asn Phe Val Thr Leu Tyr Asn
 1525 1530 1535
 Arg Lys Leu Leu Leu Asn Phe Leu Leu Lys Leu His Tyr Leu Lys Tyr
 1540 1545 1550
 Gln Glu Gln Phe Met Lys Thr Tyr Asn Gly Ile Gly Ser Ile Tyr Lys
 1555 1560 1565
 Phe Val His Val Leu Asp Lys Lys Leu Met Asn Thr Ile Arg Glu Ser
 1570 1575 1580
 Phe Arg Val Ile Leu Gln Asn Asp Lys Phe Leu Arg Glu Lys Met Asn
 1585 1590 1595 1600
 Met Lys Met Glu Gln Met Asp Met Lys Met Glu Lys Ile Asp Val Asn

	1605	1610	1615
Met Asp Gln Met Asp Val Lys Met Glu Gln Met Asp Val Lys Met Glu			
1620	1625	1630	
Gln Met Asp Val Lys Met Lys Arg Met Asn Lys Lys Lys Ser Lys Gln			
1635	1640	1645	
Ile His Val Asn Tyr Asn Asn Lys Ala Tyr Ser Ser Ser Ser Pro Ser			
1650	1655	1660	
Pro Met Leu Arg Tyr Asn Lys Tyr Lys Asp Met Ser Ser Asn Ser Ala			
1665	1670	1675	1680
Ser Leu Ile Lys Lys Tyr Pro Phe Leu Ile Tyr Asn Ser Glu Ile Ser			
1685	1690	1695	
Pro Asp Cys Thr Thr Met Ala Gly Lys Phe Tyr Asn Gln Lys Asn Lys			
1700	1705	1710	

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 <212> PRT
 <213> Plasmodium falciparum

<400> 63
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 His Ile Ile Lys His Lys Ile Tyr Phe Pro Ser Lys Ser Asn Lys Ser
 20 25 30
 Tyr Phe Ser Ser Ser Val Lys Asp Val Glu Lys Lys Asn Lys Glu Pro
 35 40 45
 Ile Ile Gln Leu Thr Asn Asp Ala Ile Asn Lys Met Lys Glu Ile Asn
 50 55 60
 Leu Lys Tyr Lys Asn Ser Lys Ala Leu Lys Val Cys Val Glu Ala Gly
 65 70 75 80
 Gly Cys Ser Gly Phe Gln Tyr Ser Phe Ser Leu Ile Asp Lys Asn Lys
 85 90 95
 Ile Lys Asp Lys Glu Gln Ile Val Tyr Asp Lys Asp Cys Ile Val Val
 100 105 110
 Ile Asp Lys Gln Val Ile Asp Ile Leu Lys Asn Ser Lys Ile His Tyr
 115 120 125
 Ile Asn Asn Leu Ile Ser Lys Lys Phe Thr Ile Glu Asn Ile Gln Asn
 130 135 140
 Ile Ser Ser Lys Cys Ser Cys Gly Asn Ser Phe Asp Ile Asp Phe Val
 145 150 155 160

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 <212> PRT
 <213> Plasmodium falciparum

<400> 64

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			20					25					30		
Leu	Ser	Gly	Thr	Ser	Asp	Leu	Gln	Lys	Cys	Ile	Ser	Cys	Gly	Glu	Lys
		35					40					45			
Tyr	Tyr	Lys	Ile	Ser	Pro	Cys	Thr	Gln	Asn	His	Glu	Val	Thr	Asp	Glu
	50					55					60				
Lys	Met	Lys	Asn	Leu	Ile	Thr	Lys	Ile	Ile	Glu	Ile	Ala	Ile	Asp	Arg
65					70					75					80
His	Thr	Leu	Gly	Leu	His	Asp	Phe	Ser	Ser	Val	Ser	Asp	Glu	Tyr	Lys
				85					90					95	
Glu	Lys	Ile	Lys	Met	Leu	Cys	Met	Phe	Ser	Asn	Tyr	Lys	Asp	Asn	Tyr
			100					105					110		
Glu	Asn	Ala	Asn	Asn	His	Arg	Gln	Ala	Lys	Val	Glu	Ile	Val	Glu	Glu
		115					120					125			
His	Ile	His	Lys	Ile	Val	Glu	Ser	Tyr	Ile	Asn	Glu	Glu	Asn	Asn	Met
	130					135					140				
Glu	His	Met	Lys	Asp	Leu	Leu	Lys	Asn	Pro	Ala	Leu	Cys	Leu	Lys	Asn
145					150					155					160
Pro	Asn	Gln	Trp	Val	Lys	Asp	Arg	Ala	Gly	Phe	Lys	Asp	Asp	Asp	Lys
				165					170					175	
Pro	Ser	Val	Gly	Ile	Ile	Pro	Glu	Arg	Lys	Ile	Phe	Lys	Pro	Tyr	Asp
			180					185					190		
Ile	Lys	Thr	Leu	Lys	Ser	Ser	Leu	Tyr	Ala	Ser	Ser	Thr	Asn	Cys	Asp
		195					200					205			
Arg	Gln	Phe	Cys	Asp	Arg	Phe	Ser	Asp	Ser	Asn	Glu	Cys	Glu	His	Arg
	210					215					220				
Ile	Arg	Val	Leu	Asn	Gln	Gly	Lys	Cys	Gly	Asn	Cys	Trp	Val	Phe	Ala
225					230					235					240
Ser	Ser	Val	Val	Ile	Ala	Ala	Tyr	Arg	Cys	Arg	Lys	Gly	Leu	Gly	Phe
				245					250					255	
Ala	Glu	Pro	Ser	Ile	Lys	Tyr	Val	Thr	Leu	Cys	Lys	Asn	Lys	His	Leu
			260					265					270		
Met	Asp	Ile	Asp	Asn	Asn	Pro	Phe	Gly	His	Tyr	Asn	Asp	Asn	Ile	Cys
	275						280					285			
Lys	Glu	Gly	Gly	His	Leu	Ser	Tyr	Tyr	Leu	Glu	Thr	Leu	Glu	Lys	Thr
	290					295					300				
Arg	Met	Leu	Pro	Thr	Ser	His	Asp	Val	Pro	Tyr	Asn	Glu	Pro	Ile	Thr
305					310					315					320
Gly	Ser	Glu	Cys	Pro	Asp	Asn	Lys	Glu	Thr	Trp	Ser	Asn	Ile	Trp	Lys
				325					330					335	
Gly	Val	Asn	Leu	Met	Asp	Arg	Ile	Tyr	Ala	Gly	Tyr	Ile	Tyr	His	Gly
			340					345					350		
Tyr	Phe	Lys	Val	Ser	Phe	Lys	Asp	Tyr	Val	Val	Ser	Asn	Arg	Thr	Asn
		355					360					365			
Asp	Leu	Ile	Asn	Ile	Ile	Lys	Asp	Tyr	Ile	Ile	Gln	Gln	Gly	Ser	Val

370					375					380					
Phe	Val	Ser	Met	Glu	Val	Thr	Asp	Lys	Leu	Thr	Phe	Asp	His	Asp	Gly
385					390					395					400
Thr	Lys	Val	Met	Met	Ser	Cys	Glu	Asp	Asn	Asp	Ser	Pro	Asp	His	Ala
			405						410					415	
Leu	Val	Leu	Ile	Gly	Tyr	Gly	Asp	Tyr	Ile	Lys	Thr	Asn	Gly	Lys	Lys
			420					425					430		
Ser	Ser	Tyr	Trp	Leu	Leu	Arg	Asn	Ser	Trp	Gly	Ser	His	Trp	Gly	Asp
		435					440					445			
Lys	Gly	Asn	Phe	Lys	Leu	Asp	Met	Tyr	Gly	Pro	Asn	Asn	Cys	Asn	Gly
	450					455					460				
Lys	Val	Leu	Tyr	Asn	Ala	Phe	Pro	Leu	Leu	Leu	Asn	Met	Ala	His	Asn
465					470					475					480
Pro	Ile	Asp	Val	Pro	Leu	Pro	Asn	Asp	Leu	Ala	Ser	Thr	Asp	Ile	Arg
			485						490					495	
Val	Arg	Tyr	Arg	Gln	Ser	Asp	Phe	Asn	Gln	Asn	Arg	Asn	Arg	Asn	Asn
			500					505					510		
Tyr	Pro	Gln	Tyr	Asp	Lys	Asn	Ser	Asn	Asp	Asn	Asp	Arg	Asn	Tyr	Ile
		515					520					525			
Asn	Pro	Tyr	Asn	Lys	Asn	Asp	Asn	Asn	Tyr	Asn	Pro	Tyr	Asn	Lys	Pro
	530					535					540				
His	Tyr	Asn	Asp	Lys	Glu	Asn	Asp	Ala	Tyr	Tyr	Glu	Lys	Asn	Asp	Asp
545					550					555					560
Tyr	Asn	Asn	Ala	His	Ile	Arg	Arg	Asn	Thr	Ile	Arg	Phe	Lys	Lys	Arg
			565						570					575	
Ile	Ile	Lys	Tyr	Ser	Leu	Tyr	Ala	Arg	Ile	Gly	Asn	Thr	Val	Tyr	Lys
			580					585					590		
Arg	Thr	Ile	Phe	Ser	Lys	Ser	Thr	Cys	Asn						
		595					600								

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 <212> PRT
 <213> Plasmodium falciparum

<400> 65
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 Gly Ala Asn Pro Gly Asp Glu Arg Glu Ser Ser Gly Arg Val Asn Asn
 35 40 45
 Pro Ala Ser Gly Glu Gln Gly Thr Thr Asn Ser Pro Thr Glu Gln Pro
 50 55 60
 Asp Gln Thr Arg Asp Arg Ser Ser Ser Val Pro Gln Gly Ser Pro Arg
 65 70 75 80
 Glu Pro Val Ser Pro Glu Asn Pro Asn Pro Val Thr Gln Ile Pro Gly
 85 90 95
 Asn Gly Gly Ala Leu Val Thr Pro Ile Pro Leu Pro Lys Leu Thr Leu

100					105					110					
Glu	Asp	Ser	Glu	Ser	Ser	Lys	Ser	Val	Ile	Asp	Ile	Glu	Val	Lys	Ser
		115					120					125			
Ala	Leu	Leu	Lys	Asn	Tyr	Asp	Gly	Val	Lys	Ile	Thr	Gly	Pro	Cys	Arg
	130					135					140				
Ser	Tyr	Phe	Arg	Val	Met	Leu	Val	Pro	His	Ile	Thr	Val	Tyr	Val	Tyr
145					150					155					160
Ala	Thr	Tyr	Asp	Arg	Ile	Gln	Leu	Glu	Pro	Lys	Phe	Gly	Pro	Ser	Asp
				165					170					175	
Leu	Ile	Asp	Ile	Asn	Asp	Leu	Thr	Asn	Lys	Cys	Asn	Lys	Asp	Ser	Asn
			180					185					190		
Lys	Tyr	Phe	Lys	Leu	Val	Leu	Tyr	Ile	Lys	Asn	Asn	Ile	Leu	Ile	Leu
		195					200					205			
Lys	Trp	Lys	Val	Gln	Asp	Lys	Asp	Ser	Lys	Pro	Thr	Asn	Ile	Asp	Val
	210					215					220				
Asp	Val	Lys	Lys	Tyr	Lys	Ile	Pro	Lys	Leu	Asp	Arg	Pro	Phe	Thr	Ser
225					230					235					240
Ile	Gln	Val	Tyr	Thr	Val	Asn	Thr	Glu	His	Gly	Leu	Ile	Glu	Ser	Lys
				245					250					255	
Asn	Tyr	Asp	Ile	Asn	Ser	Glu	Ile	Pro	Glu	Gln	Cys	Glu	Ala	Ile	Ser
			260					265					270		
Thr	Asn	Cys	Phe	Leu	Asn	Gly	Ser	Leu	Asp	Val	Glu	Asn	Cys	Tyr	His
		275					280					285			
Cys	Thr	Leu	Leu	Ala	Lys	Lys	Val	Asp	Ser	Asn	Asn	Glu	Cys	Phe	Asn
	290					295					300				
Tyr	Val	Ser	Lys	Glu	Ala	Lys	Glu	Leu	Ile	Asn	Lys	Asn	Leu	Glu	Glu
305					310					315					320
Lys	Asn	Lys	Thr	Phe	Lys	Gly	Glu	Asp	Glu	Asp	Leu	Asp	Ser	Asn	Glu
				325					330					335	
Gln	Lys	Leu	Glu	Glu	Ser	Ile	Asp	Asn	Ile	Leu	Ser	Asn	Ile	Tyr	Lys
			340					345					350		
Ile	Tyr	Glu	Ser	Lys	Gln	Asp	Lys	Glu	Arg	Lys	Lys	Ser	His	Tyr	Asn
		355					360					365			
Asn	Lys	Lys	Glu	Leu	Val	Thr	Ile	Glu	Glu	Leu	Asn	Ser	Val	Leu	Lys
						375					380				
Ile	Glu	Leu	Leu	Asn	Tyr	Cys	Lys	Leu	Leu	Lys	Glu	Val	Asp	Arg	Ser
385					390					395					400
Gly	Met	Leu	Asp	His	His	Glu	Ile	Gly	Asn	Glu	Ile	Asp	Ile	Phe	Asn
				405					410					415	
Asn	Leu	Ile	Arg	Leu	Leu	Lys	Ala	His	Pro	Gly	Glu	Ser	Thr	Tyr	Val
				420				425					430		
Leu	Asn	Glu	Lys	Leu	Arg	Asn	Pro	Ala	Leu	Cys	Phe	Lys	Asn	Ile	Glu
				435				440					445		
Glu	Trp	Leu	Val	Asn	Lys	Lys	Gly	Leu	Leu	Leu	Ser	Asn	Glu	Lys	Ile
	450					455					460				
Gln	Asn	Leu	Ser	Thr	Thr	Asn	Tyr	Asn	Val	Thr	Asp	Leu	Glu	Glu	Ser
					470					475					480

Glu Tyr Asp Tyr Glu Arg Phe Ile Ser Asp Asp Met Phe Glu Lys Asp
 485 490 495
 Met Asn Gly Val Ile Asp Leu Ser Leu Phe Asp Asn Glu Lys Lys Leu
 500 505 510
 Lys Ser Pro Tyr Phe Arg Arg Asn Lys Tyr Cys Asn Asn Glu Tyr Cys
 515 520 525
 Asp Arg Trp Lys Asp Lys Thr Gly Cys Ile Ser Lys Ile Glu Val Glu
 530 535 540
 Glu Gln Gly Asn Cys Gly Leu Cys Trp Ile Phe Ala Ser Lys Leu His
 545 550 555 560
 Phe Glu Thr Ile Arg Cys Met Arg Gly Tyr Gly His Phe Arg Ser Ser
 565 570 575
 Ala Leu Tyr Val Ala Asn Cys Ser Asp Arg Asp Ser Asp Glu Ile Cys
 580 585 590
 Phe Val Gly Ser Asn Pro Val Glu Phe Leu Glu Ile Val Glu Glu Thr
 595 600 605
 Gly Phe Leu Pro Leu Glu Ser Asp Val Pro Tyr Tyr Tyr Thr Asp Ala
 610 615 620
 Gly Asn Asp Cys Pro Glu Pro Glu Lys Asn Trp Ile Asn Leu Trp Gly
 625 630 635 640
 Ser Thr Glu Leu Leu Asn His Lys Arg Pro Arg Gln Arg Met Thr Thr
 645 650 655
 Lys Gly Tyr Ile Ser Tyr Glu Ser Ser Tyr Phe Ser Asp Asn Met Asp
 660 665 670
 Leu Phe Ile Lys Ile Ile Lys Arg Glu Ile Gln Asn Lys Gly Ser Val
 675 680 685
 Ile Ala Tyr Ile Lys Thr Glu Asn Val Ile Asp Phe Asp Phe Asn Gly
 690 695 700
 Lys Gly Val His Asn Met Cys Gly Asp Lys Glu Pro Asp His Ala Ala
 705 710 715 720
 Asn Ile Ile Gly Tyr Gly Asn Tyr Ile Asp Glu Glu Gly Glu Lys Lys
 725 730 735
 Ser Tyr Trp Leu Ile Arg Asn Ser Trp Gly Tyr Tyr Trp Gly Asp Glu
 740 745 750
 Gly Asn Phe Arg Val Asp Met Tyr Gly Pro Ser Tyr Cys Lys Tyr Asn
 755 760 765
 Phe Ile His Thr Val Val Val Phe Lys Val Asp Leu Gly Ile Ile Glu
 770 775 780
 Val Pro Lys Lys Glu Lys Glu Ser Glu Tyr Phe Ser Tyr Phe Leu Lys
 785 790 795 800
 Tyr Thr Pro Asn Phe Leu Tyr Asn Leu Phe Phe Asn Asn Tyr Thr Thr
 805 810 815
 Asn Asp Glu Tyr Lys Leu Asn Asn Arg Leu Lys Thr Asn Gln His Asn
 820 825 830
 Asn Lys Lys Asn Lys Lys Asp Arg Tyr Ile Ser Ala Gln Asp Glu Pro
 835 840 845

Pro Thr Asp Asn Val Glu Ser Gln Ala Glu Asn Asn Lys Lys Thr Glu
850 855 860

Ile Tyr His Ile Leu Lys His Ile Lys Asp Lys Lys Ile Lys Arg Gly
865 870 875 880

Leu Val Lys Tyr Glu Ser Leu Leu Glu Thr Lys Lys Asp His Ser Cys
885 890 895

Ser Arg Thr His Ser Ile Asp Pro Glu Lys His Glu Glu Cys Asn Gln
900 905 910

Phe Cys Ile Asp Asn Trp Lys Ala Cys Lys Asp His Tyr Ser Pro Gly
915 920 925

Tyr Cys Leu Thr Lys Leu Tyr Thr Lys Asp Asp Asn Cys Phe Phe Cys
930 935 940

Asn Val
945

<210> 66
<211> 1041
<212> PRT
<213> Plasmodium falciparum

<400> 66
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Phe Leu Tyr Ile Ile Asn Val Leu Phe Thr Gln Tyr Phe Ile Lys Cys
20 25 30

Glu Gly Asn Lys Val Thr Val Ile Ser His Asn Asn Gly His Asn Asp
35 40 45

Asn Leu Asp Val Asn Lys Asn Gly Val Ile Ser Gln Glu Asn Val Phe
50 55 60

Asp Thr Ser Glu Ser Leu Asn Leu Pro Ser Asn Lys Lys Val Gly Ser
65 70 75 80

Asp Asp Leu Asn Thr Thr Thr Ile Ser Phe Thr Val Pro Asp Asn Leu
85 90 95

Glu Asn Glu Val Lys Val Val Ser Ser Ser Glu Ser Gly Lys Gly Ala
100 105 110

Thr Val Ser His Thr Lys Val Thr Ser Glu Gly Leu Ser Asp Thr Gln
115 120 125

Pro Asn Val Thr Gln Ser Val Ser Ser Ser Thr His Thr Pro Gly Ser
130 135 140

Leu Asp Ser Thr Met Ser Thr Glu Gln His Ser Ser Val Ser Gln Ser
145 150 155 160

Ser Leu Pro Thr Glu Ser Ser Ser Glu Thr Leu Asn Lys Ala Thr Val
165 170 175

Pro Glu Ile Pro Ile Gln Ile Asn Ser Gly Leu Leu Lys Asn Tyr Asn
180 185 190

Gly Val Lys Val Thr Gly Ser Cys Gly Ser Tyr Phe Arg Val Tyr Leu
195 200 205

Val Pro His Ile Leu Ile Tyr Ala Leu Thr Lys Tyr Ser Val Ile Gln
210 215 220

Leu Glu Ser Leu Phe Asn Asp Asn Ala Arg Ile Asp Val Glu His Lys
 225 230 235 240
 Gly Glu Leu Gln Asn Lys Cys Ser Glu Gly Tyr His Phe Lys Leu Val
 245 250 255
 Val Tyr Ile Thr His Asn Val Leu Asn Leu Lys Trp Lys Thr Tyr Lys
 260 265 270
 Pro Asn Glu Glu Ser Lys Ser Glu Asp Ser Asp Val Arg Lys Tyr Arg
 275 280 285
 Ile Pro Lys Leu Glu Arg Pro Phe Thr Ser Ile Gln Val Tyr Thr Ala
 290 295 300
 Asn Ser Lys Ala Gly Val Ile Glu Thr Lys Asn Tyr Asn Ile Arg Thr
 305 310 315 320
 Asp Ile Pro Asp Thr Cys Asp Ala Ile Ala Thr Asp Cys Phe Leu Asn
 325 330 335
 Gly Asn Val Asn Ile Glu Lys Cys Phe Gln Cys Thr Leu Leu Val Gln
 340 345 350
 Lys Lys Asp Lys Ser His Glu Cys Phe Lys Tyr Val Ser Ser Glu Met
 355 360 365
 Lys Lys Lys Met Asn Glu Ile Lys Val Lys Ala Gln Asp Asp Phe Asn
 370 375 380
 Pro Asn Glu Tyr Lys Leu Ile Glu Ser Ile Asp Asn Ile Leu Ser Lys
 385 390 395 400
 Ile Tyr Lys Lys Ala Asn Lys Pro Phe Glu Ile Ser Lys Asp Leu Ile
 405 410 415
 Asn Leu Glu Asp Leu Asp Tyr Gln Phe Lys Asn Glu Leu Leu Glu Tyr
 420 425 430
 Cys Lys Leu Leu Lys Lys Val Asp Thr Ser Gly Thr Leu Glu Glu Tyr
 435 440 445
 Glu Leu Gly Asn Ala Glu Asp Ile Tyr Asn Asn Leu Thr Arg Leu Leu
 450 455 460
 Lys Ser His Ser Asp Glu Asn Ile Val Thr Leu Gln Gly Lys Leu Arg
 465 470 475 480
 Asn Thr Ala Ile Cys Ile Lys Asn Val Asp Glu Trp Ile Leu Asn Lys
 485 490 495
 Arg Gly Leu Thr Leu Pro Ser Glu Ser Pro Ser Glu Ser Ser Ser Lys
 500 505 510
 Ser Asp Ser Tyr Leu Asn Thr Phe Asn Asp Lys Asp Lys Asn Glu Asp
 515 520 525
 Lys Asp Asp Met Ser Lys Asn Ser Lys Glu Glu Phe Lys Asn Asp Asp
 530 535 540
 Lys Glu Asn Ser Asp Asp Gln Asn Asn Asn Asp Ser Asn Lys Lys Asp
 545 550 555 560
 Asp Glu Asn Asn Ile Asn Asn Gly Asp Thr Asn Tyr Val Tyr Asp Phe
 565 570 575
 Asp Asp Asp Asp Tyr Asp Asn Asn Ser Tyr Glu Lys Asp Met Tyr Glu
 580 585 590
 Ser Pro Ile Lys Glu Asn Lys Asn Gly Val Ile Asp Leu Glu Lys Tyr

125

Leu Val Lys Tyr Asp Asn Ile Asn Glu Thr Lys Asp Glu His Thr Cys
 980 985 990

Ser Arg Val Asn Ser Gln Asp Ala Glu Lys Tyr Glu Glu Cys Lys Lys
 995 1000 1005

Phe Cys Leu Thr Lys Trp Asn Glu Cys Lys Asp His Tyr Ser Pro Gly
 1010 1015 1020

Tyr Cys Leu Thr Asp Leu Tyr Lys Gly Glu Asp Cys Asn Phe Cys Tyr
 1025 1030 1035 1040

Val

<210> 67
 <211> 997
 <212> PRT
 <213> Plasmodium falciparum

<400> 67
 Met Lys Ser Tyr Ile Ser Leu Phe Phe Ile Leu Cys Val Ile Phe Asn
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Lys Asn Val Ile Lys Cys Thr Gly Glu Ser Gln Thr Gly Asn Thr Gly
 20 25 30

Gly Gly Gln Ala Gly Asn Thr Gly Gly Asp Gln Ala Gly Ser Thr Gly
 35 40 45

Gly Ser Pro Gln Gly Ser Thr Gly Ala Ser Pro Gln Gly Ser Thr Gly
 50 55 60

Ala Ser Pro Gln Gly Ser Thr Gly Ala Ser Gln Pro Gly Ser Ser Glu
 65 70 75 80

Pro Ser Asn Pro Val Ser Ser Gly His Ser Val Ser Thr Val Ser Val
 85 90 95

Ser Gln Thr Ser Thr Ser Ser Glu Lys Gln Asp Thr Ile Gln Val Lys
 100 105 110

Ser Ala Leu Leu Lys Asp Tyr Met Gly Leu Lys Val Thr Gly Pro Cys
 115 120 125

Asn Glu Asn Phe Ile Met Phe Leu Val Pro His Ile Tyr Ile Asp Val
 130 135 140

Asp Thr Glu Asp Thr Asn Ile Glu Leu Arg Thr Thr Leu Lys Lys Thr
 145 150 155 160

Asn Asn Ala Ile Ser Phe Glu Ser Asn Ser Gly Ser Leu Glu Lys Lys
 165 170 175

Lys Tyr Val Lys Leu Pro Ser Asn Gly Thr Thr Gly Glu Gln Gly Ser
 180 185 190

Ser Thr Gly Thr Val Arg Gly Asp Thr Glu Pro Ile Ser Asp Ser Ser
 195 200 205

Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
 210 215 220

Ser Ser Ser Ser Ser Ser Ser Ser Ser Glu Ser Leu Pro Ala Asn Gly
 225 230 235 240

Pro Asp Ser Pro Thr Val Lys Pro Pro Arg Asn Leu Gln Asn Ile Cys
 245 250 255

Glu Thr Gly Lys Asn Phe Lys Leu Val Val Tyr Ile Lys Glu Asn Thr
 260 265 270
 Leu Ile Leu Lys Trp Lys Val Tyr Gly Glu Thr Lys Asp Thr Thr Glu
 275 280 285
 Asn Asn Lys Val Asp Val Arg Lys Tyr Leu Ile Asn Glu Lys Glu Thr
 290 295 300
 Pro Phe Thr Asn Ile Leu Ile His Ala Tyr Lys Glu His Asn Gly Thr
 305 310 315 320
 Asn Leu Ile Glu Ser Lys Asn Tyr Ala Ile Gly Ser Asp Ile Pro Glu
 325 330 335
 Lys Cys Asp Thr Leu Ala Ser Asn Cys Phe Leu Ser Gly Asn Phe Asn
 340 345 350
 Ile Glu Lys Cys Phe Gln Cys Ala Leu Leu Val Glu Lys Glu Asn Lys
 355 360 365
 Asn Asp Val Cys Tyr Lys Tyr Leu Ser Glu Asp Ile Val Ser Lys Phe
 370 375 380
 Lys Glu Ile Lys Ala Glu Thr Glu Asp Asp Asp Glu Asp Asp Tyr Thr
 385 390 395 400
 Glu Tyr Lys Leu Thr Glu Ser Ile Asp Asn Ile Leu Val Lys Met Phe
 405 410 415
 Lys Thr Asn Glu Asn Asn Asp Lys Ser Glu Leu Ile Lys Leu Glu Glu
 420 425 430
 Val Asp Asp Ser Leu Lys Leu Glu Leu Met Asn Tyr Cys Ser Leu Leu
 435 440 445
 Lys Asp Val Asp Thr Thr Gly Thr Leu Asp Asn Tyr Gly Met Gly Asn
 450 455 460
 Glu Met Asp Ile Phe Asn Asn Leu Lys Arg Leu Leu Ile Tyr His Ser
 465 470 475 480
 Glu Glu Asn Ile Asn Thr Leu Lys Asn Lys Phe Arg Asn Ala Ala Val
 485 490 495
 Cys Leu Lys Asn Val Asp Asp Trp Ile Val Asn Lys Arg Gly Leu Val
 500 505 510
 Leu Pro Glu Leu Asn Tyr Asp Leu Glu Tyr Phe Asn Glu His Leu Tyr
 515 520 525
 Asn Asp Lys Asn Ser Pro Glu Asp Lys Asp Asn Lys Gly Lys Gly Val
 530 535 540
 Val His Val Asp Thr Thr Leu Glu Lys Glu Asp Thr Leu Ser Tyr Asp
 545 550 555 560
 Asn Ser Asp Asn Met Phe Cys Asn Lys Glu Tyr Cys Asn Arg Leu Lys
 565 570 575
 Asp Glu Asn Asn Cys Ile Ser Asn Leu Gln Val Glu Asp Gln Gly Asn
 580 585 590
 Cys Asp Thr Ser Trp Ile Phe Ala Ser Lys Tyr His Leu Glu Thr Ile
 595 600 605
 Arg Cys Met Lys Gly Tyr Glu Pro Thr Lys Ile Ser Ala Leu Tyr Val
 610 615 620

Ala	Asn	Cys	Tyr	Lys	Gly	Glu	His	Lys	Asp	Arg	Cys	Asp	Glu	Gly	Ser	
625					630					635					640	
Ser	Pro	Met	Glu	Phe	Leu	Gln	Ile	Ile	Glu	Asp	Tyr	Gly	Phe	Leu	Pro	
				645					650					655		
Ala	Glu	Ser	Asn	Tyr	Pro	Tyr	Asn	Tyr	Val	Lys	Val	Gly	Glu	Gln	Cys	
			660					665					670			
Pro	Lys	Val	Glu	Asp	His	Trp	Met	Asn	Leu	Trp	Asp	Asn	Gly	Lys	Ile	
		675					680					685				
Leu	His	Asn	Lys	Asn	Glu	Pro	Asn	Ser	Leu	Asp	Gly	Lys	Gly	Tyr	Thr	
	690					695					700					
Ala	Tyr	Glu	Ser	Glu	Arg	Phe	His	Asp	Asn	Met	Asp	Ala	Phe	Val	Lys	
705					710					715					720	
Ile	Ile	Lys	Thr	Glu	Val	Met	Asn	Lys	Gly	Ser	Val	Ile	Ala	Tyr	Ile	
				725					730					735		
Lys	Ala	Glu	Asn	Val	Met	Gly	Tyr	Glu	Phe	Ser	Gly	Lys	Lys	Val	Gln	
			740					745					750			
Asn	Leu	Cys	Gly	Asp	Asp	Thr	Ala	Asp	His	Ala	Val	Asn	Ile	Val	Gly	
		755					760					765				
Tyr	Gly	Asn	Tyr	Val	Asn	Ser	Glu	Gly	Glu	Lys	Lys	Ser	Tyr	Trp	Ile	
	770					775					780					
Val	Arg	Asn	Ser	Trp	Gly	Pro	Tyr	Trp	Gly	Asp	Glu	Gly	Tyr	Phe	Lys	
785					790					795					800	
Val	Asp	Met	Tyr	Gly	Pro	Thr	His	Cys	His	Phe	Asn	Phe	Ile	His	Ser	
				805					810					815		
Val	Val	Ile	Phe	Asn	Val	Asp	Leu	Pro	Met	Asn	Asn	Lys	Thr	Thr	Lys	
			820					825					830			
Lys	Glu	Ser	Lys	Ile	Tyr	Asp	Tyr	Tyr	Leu	Lys	Ala	Ser	Pro	Glu	Phe	
		835					840					845				
Tyr	His	Asn	Leu	Tyr	Phe	Lys	Asn	Phe	Asn	Val	Gly	Lys	Lys	Asn	Leu	
	850					855					860					
Phe	Ser	Glu	Lys	Glu	Asp	Asn	Glu	Asn	Asn	Lys	Lys	Leu	Gly	Asn	Asn	
865					870					875					880	
Tyr	Ile	Ile	Phe	Gly	Gln	Asp	Thr	Ala	Gly	Ser	Gly	Gln	Ser	Gly	Lys	
				885					890					895		
Glu	Ser	Asn	Thr	Ala	Leu	Glu	Ser	Ala	Gly	Thr	Ser	Asn	Glu	Val	Ser	
			900					905					910			
Glu	Arg	Val	His	Val	Tyr	His	Ile	Leu	Lys	His	Ile	Lys	Asp	Gly	Lys	
		915					920					925				
Ile	Arg	Met	Gly	Met	Arg	Lys	Tyr	Ile	Asp	Thr	Gln	Asp	Val	Asn	Lys	
	930					935					940					
Lys	His	Ser	Cys	Thr	Arg	Ser	Tyr	Ala	Phe	Asn	Pro	Glu	Asn	Tyr	Glu	
945					950					955					960	
Lys	Cys	Val	Asn	Leu	Cys	Asn	Val	Asn	Trp	Lys	Thr	Cys	Glu	Glu	Lys	
				965					970					975		
Thr	Ser	Pro	Gly	Leu	Cys	Leu	Ser	Lys	Leu	Asp	Thr	Asn	Asn	Glu	Cys	
			980					985					990			
Tyr	Phe	Cys	Tyr	Val												

<210> 68
 <211> 962
 <212> PRT
 <213> Plasmodium falciparum

<400> 68

Met Lys Ile His Ile Phe Leu Ile Ala Thr Ile Tyr Val Leu Phe Ser
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 Glu Lys Leu Ile Lys Trp Thr Thr Ala Ser Thr Thr Gln Gly Gly Asp
 20 25 30
 Thr Asp Thr His Pro Gly Thr Pro Pro Gly Glu Gly Ser Asp Val Ser
 35 40 45
 Gln Gly Ala Gly Gln Asp Ala Ser Gln Gly Ala Gly Gln Asp Ala Asn
 50 55 60
 Pro Asp Pro Thr Leu Pro Lys Pro Pro Ser Pro Pro Ala Asp Asp Thr
 65 70 75 80
 Lys Asp Thr Gly Ser Gln Gly Asp Ala Asp Ser Ser Ser Ser Lys Ile
 85 90 95
 Glu Ile Pro Pro Leu Val Lys Pro Glu Asn His Lys Thr Ile Val Ser
 100 105 110
 Ala Met Leu Lys Asn Tyr Lys Gly Val Lys Val Thr Gly Thr Cys Gly
 115 120 125
 Ala Asp Phe Gly Leu Phe Leu Val Pro His Ile Tyr Val His Val Lys
 130 135 140
 Ser Glu Asp Thr Glu Ile Glu Leu Ser Ser Glu Leu Ala Pro Pro Glu
 145 150 155 160
 Met Gln Thr Lys Phe Asp Lys Thr Gln Leu Lys Lys Phe Cys Val Lys
 165 170 175
 Asp Asp Thr Lys Lys Phe Asp Phe Ile Ala Tyr Ile Tyr Lys Asp Ile
 180 185 190
 Leu Val Phe Lys Trp Lys Val Tyr Glu Glu Gly Leu Ser Lys Glu Gln
 195 200 205
 Asp Val Asp Glu Met Lys Tyr Leu Leu Pro Asn Leu Lys Gln Pro Ile
 210 215 220
 Thr Ser Ile Gln Val His Ser Trp Thr Gly Thr Lys Glu Ser Tyr Ile
 225 230 235 240
 Leu Glu Ser Lys Asp Tyr Val Leu Gly Glu Gly Met Pro Glu Lys Cys
 245 250 255
 Asp Ala Ile Ala Thr Asp Cys Phe Leu Ser Gly Phe Thr Asp Ile Gly
 260 265 270
 Lys Cys Phe Gln Cys Lys Leu Leu Met Gln Glu Lys Asn Ile Asn Asp
 275 280 285
 Ser Cys Phe Lys Tyr Val Ser Ser Asn Gln Lys Glu Leu Ile Lys Lys
 290 295 300
 Gln Leu Lys Ile Thr Ala Gln Asp Asp Glu Glu Ser Ser Glu Tyr His
 305 310 315 320
 Leu Ser Glu Ser Ile Lys Asn Leu Leu Lys Asn Ile Tyr Lys Lys Asn

325

330

335

Asn Asp Asp Asn Lys Lys Lys Glu Leu Leu His Phe Glu Asn Val Asn
 340 345 350
 Ser Ala Leu Lys Ser Glu Leu Leu Asn Tyr Cys Asn Leu Leu Lys Glu
 355 360 365
 Val Asn Met Asn Gly Val Leu Lys Asp His Gln Leu Gly Asn Val Gln
 370 375 380
 Asp Val Phe Asn Asn Leu Thr Lys Leu Leu Glu Glu His Lys Glu Glu
 385 390 395 400
 Asn Asp Asn Val Leu Tyr His Lys Met Lys Asn Glu Ala Leu Cys Leu
 405 410 415
 Lys Asn Val Asn Asp Trp Met Lys Asn Lys Thr Gly Leu Leu Leu Pro
 420 425 430
 Gln Leu Ser Tyr Asp Leu Thr Tyr Lys Asn Asn Asn Phe Thr Glu Phe
 435 440 445
 Thr Gln Asn Lys Ser Tyr Thr Ser Gln Asn Ile Val Asp Lys Leu Tyr
 450 455 460
 Cys Asn His Glu Tyr Cys Asn Arg Leu Lys Asp His Asn Asn Cys Ile
 465 470 475 480
 Ser Lys Ile Asn Val Glu Asp Gln Lys Asn Cys Ala Leu Ser Trp Ala
 485 490 495
 Phe Ala Ser Lys Tyr His Leu Glu Thr Ile Lys Cys Met Lys Gly Tyr
 500 505 510
 Glu Pro Leu Asn Ala Ser Val Leu Tyr Val Thr Asn Cys Leu Lys Asn
 515 520 525
 Lys Asn Lys Asp Val Cys Thr Glu Gly Ser Asn Pro Leu Val Phe Leu
 530 535 540
 Glu Thr Ile Glu Glu Lys Gly Phe Leu Pro Thr Glu Ser Asn Tyr Pro
 545 550 555 560
 Tyr Asp Gln Ser Lys Val Gly Asp Ile Cys Pro Gln Leu Gln Asn Asp
 565 570 575
 Trp Asp Asn Val Phe Glu Asn Thr Lys Val Leu Asp Tyr Asn Asn Gly
 580 585 590
 Pro Phe Ser Val Gly Thr Lys Gly Tyr Ile Ala Tyr Glu Ser Glu Ala
 595 600 605
 Phe Gln Lys Asp Met His Ser Phe Val Lys Leu Val Lys Asp Glu Ile
 610 615 620
 Met Asn Lys Gly Ser Val Ile Ala Tyr Val Lys Ala Glu Asn Val Leu
 625 630 635 640
 Gly Tyr Glu Leu Asn Gly Lys Lys Val Gln Asn Leu Cys Gly Asp Lys
 645 650 655
 Thr Pro Asp His Val Val Asn Ile Val Gly Tyr Gly Asn Tyr Ile Asn
 660 665 670
 Asn Lys Gly Glu Lys Lys Ser Tyr Trp Ile Val Arg Asn Ser Trp Gly
 675 680 685
 Lys Tyr Trp Gly Asp Asp Gly Tyr Phe Lys Val Asp Met Tyr Gly Pro
 690 695 700

Ser Thr Cys Glu Asp Asn Phe Ile His Thr Val Val Val Phe Asn Val
 705 710 715 720
 Gln Val Pro Ile Asn Glu Lys Phe Asp Lys Lys Glu His Asp Ile Tyr
 725 730 735
 Asn Tyr Tyr Leu Lys Thr Ser Pro Glu Phe Tyr His Asn Leu Tyr Tyr
 740 745 750
 Lys Thr Phe Asn Ser Asn Lys Glu Glu Lys Ser Met Asn Lys Asn Ser
 755 760 765
 Tyr Val Tyr Gly Gln Asp Thr Thr Pro Val Glu Asn Glu Ala Pro Arg
 770 775 780
 Ser Gly Val Gln Lys Pro Thr Glu Leu Ser Ser Thr Glu Ser Gln Thr
 785 790 795 800
 Val Ser Pro Pro Asn Glu Ser Gln Thr Glu Ser Leu Leu Ser Gly Gly
 805 810 815
 Ser Gln Val Thr Asn Pro Thr Leu Thr Gln Ser Thr Ser Ser Ser Ser
 820 825 830
 Gly Gln Gln Glu Thr Gly Pro Leu Ser Thr Gln Gly Leu Ser Pro Ala
 835 840 845
 Thr Gly Asp Pro Lys Gly Lys Glu Gln Glu Ala Ser Pro Ala Glu Gly
 850 855 860
 Leu Ser Gly Val Leu Asn Pro Thr Lys Glu Val Thr Ser Glu Glu Lys
 865 870 875 880
 Ile Gln Ile Ile His Leu Leu Lys His Ile Lys Asn Ser Lys Ile Arg
 885 890 895
 Arg Gly Leu Val Lys Tyr Asn His Glu Phe Glu Val Gly Asp Asn Ser
 900 905 910
 Cys Ser Arg Ser Thr Ser Lys Asn Ala Glu Met His Asp Glu Cys Val
 915 920 925
 Asn Ile Cys Glu Lys Tyr Trp Pro Glu Cys Arg Gly Thr Ala Val Pro
 930 935 940
 Gly Tyr Cys Leu Ser Thr His Asp Asp Lys Asn Glu Cys Asp Phe Cys
 945 950 955 960
 Tyr Val

<210> 69
 <211> 930
 <212> PRT
 <213> Plasmodium falciparum

<400> 69
 Met Lys Phe Ser Ile Ser Leu Phe Leu Ile Leu Cys Val Leu Phe Cys
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 Lys Asn Asp Ile Lys Cys Thr Thr Val Asp Glu Ser Thr Lys Glu Gly
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 Ser Gln Asn Pro Lys Asn Ser Ser Ser Thr Thr Pro Ala Ser Gly Ser
 35 40 45
 Gln Lys Gly Ser Ser Ser Glu Ser Pro Gly Ser Ser Val Glu Lys Gln
 50 55 60

Ser Gln Glu Ser Asn Lys Glu Ser Thr Asn Gly Gly Asn Val Val Ser
 65 70 75 80
 Gln Gly Thr Pro Ala Asn Thr Phe Gly Gln Asn Ser Asn Asn Pro Ser
 85 90 95
 Asp Ser Pro Gln Gly Thr Ser Thr Leu Pro Ser Pro Pro Lys Ser Ile
 100 105 110
 Asp Val Lys Ser Ala Phe Leu Lys His Tyr Lys Gly Val Lys Val Thr
 115 120 125
 Gly Ser Cys Asn Ala Asn Phe Gln Leu Phe Leu Val Pro His Ile Phe
 130 135 140
 Ile Asn Val Glu Thr Lys Glu Asn Asn Ile Gln Leu Asp Val Lys Phe
 145 150 155 160
 Leu Lys Leu Thr Lys Arg Ile Asp Phe Ala Lys Asp Lys Ser Met Leu
 165 170 175
 Lys Asn Lys Cys Glu Ser Gly Lys Asn Gln Thr Phe Lys Phe Val Leu
 180 185 190
 Tyr Phe Lys Asp Asp Ile Leu Thr Ile Lys Trp Lys Val Tyr Glu Glu
 195 200 205
 Lys Ser Ala Thr Pro Gln Lys Ser Glu Glu Asn Thr Val Asp Ile Lys
 210 215 220
 Leu Tyr Lys Leu Pro Lys Leu Asp Gln Thr Ile Thr Ser Ile Gln Val
 225 230 235 240
 His Thr Leu Ser Ile Glu Gly Thr Ser Tyr Leu Met Glu Ser Lys Asp
 245 250 255
 Tyr Ser Leu Gly Asn Asn Leu Pro Glu Lys Cys Asp Ala Ile Ala Ser
 260 265 270
 Asp Cys Phe Leu Ser Gly Asn Ile Asn Val Glu Lys Cys Leu Lys Cys
 275 280 285
 Thr Leu Lys Val Lys Lys Val Glu Ala Ser Asp Glu Cys Tyr Lys Tyr
 290 295 300
 Val Ser Lys Asp Lys Pro Lys Glu Thr Lys Leu Ala Val Ser Gly Ser
 305 310 315 320
 Glu Val Lys Glu Val Lys Ala Ala Ser Val Asp His Ser Asn Asp Lys
 325 330 335
 Glu Tyr Glu Leu Ser Gln Ser Ile Asn Asn Ile Leu Asn Lys Met Tyr
 340 345 350
 Lys Lys Glu Ser Asn Asp Glu Lys Asn Asn Lys Lys Glu Leu Ile Lys
 355 360 365
 Leu Glu Asp Ala Asp Asp Ser Leu Gln Lys Glu Leu Asn Lys Tyr Cys
 370 375 380
 Asn Ser Leu Lys Glu Val Asp Leu Asn Gly Val Leu Ser Lys Asn Glu
 385 390 395 400
 Val Gly Asn Glu Lys Asp Val Phe Asn Asn Leu Thr Thr Leu Leu Lys
 405 410 415
 Glu His Met Leu Glu Ser His His Val Phe Glu Lys Leu Lys Asn
 420 425 430

Ser Ala Leu Cys Leu Lys Asn Ile Asp Asp Trp Leu Lys Asn Lys Asn
 435 440 445
 Gly Leu Ile Val Pro Pro Ser Lys Tyr Lys Leu Lys Asp Thr Asn Glu
 450 455 460
 Lys Lys Glu Leu Asn Asn Asn Val Glu Val Ile Glu Asp Met Phe Lys
 465 470 475 480
 Ala Asn Glu His Gly Ile Val Asp Leu Thr Lys Phe Pro Ile Asp Thr
 485 490 495
 Asn Tyr Ser Ser Tyr Lys His Ile Asp His Thr Tyr Cys Asn Asn Asp
 500 505 510
 Tyr Cys Asn Trp Ser Lys Asp Lys Asn Ser Cys Ile Ser Lys Ile Asn
 515 520 525
 Val Glu Asp Gln Lys Asn Cys Ala Leu Ser Trp Ala Phe Ala Ser Lys
 530 535 540
 Tyr His Leu Glu Thr Ile Lys Cys Met Lys Gly Tyr Glu His Ile Pro
 545 550 555 560
 Ile Ser Ser Leu Tyr Ile Ala Asn Cys Ser Lys Asn Glu Lys Lys Asp
 565 570 575
 Val Cys Thr Glu Gly Ser Asn Pro Leu Lys Val Leu Gln Met Ile Val
 580 585 590
 Glu Lys Gly Phe Leu Pro Thr Glu Gly Asp Tyr Ser Tyr Glu Gln Ser
 595 600 605
 Lys Val Gly Glu Thr Cys Pro Glu Val Gln Asn Gly Trp Val Asn Leu
 610 615 620
 Trp Ala Asn Ala Lys Leu Leu Glu Gln Asn Asn Asp Glu His Asn Ser
 625 630 635 640
 Leu Ser Thr Lys Gly Tyr Thr Ala Tyr Glu Ser Glu Ala Phe Gln Lys
 645 650 655
 Asp Met His Ser Phe Val Lys Leu Ile Lys Asp Glu Ile Met Asn Lys
 660 665 670
 Gly Ser Val Ile Ala Tyr Val Lys Ala Asp Lys Ile Met Ala Tyr Glu
 675 680 685
 Phe Asn Gly Lys Lys Val Gln Asn Leu Cys Gly Asp Lys Thr Pro Asp
 690 695 700
 His Ala Val Asn Ile Ile Gly Tyr Gly Asn Tyr Ile Asn Asp Glu His
 705 710 715 720
 Gln Lys Lys Ser Tyr Trp Ile Val Arg Asn Ser Trp Gly Lys His Trp
 725 730 735
 Gly Asp Lys Gly His Phe Lys Val Asp Met Tyr Gly Pro Ser Asp Cys
 740 745 750
 Glu Asp Asn Phe Ile His Ser Val Val Ile Phe Asn Val Asp Leu Pro
 755 760 765
 Ile Asn Gln Glu Ser Val Lys Lys Glu Pro Lys Ile Tyr Asn Tyr Tyr
 770 775 780
 Leu Lys Ala Ser Pro Asp Phe Tyr His Asn Leu Tyr Tyr Lys Asn Phe
 785 790 795 800
 Asp Ser Gln Lys Gly Lys Ala Asp Gln Ala Glu Asn Lys Lys Ser Tyr

805 810 815
 Leu Tyr Gly Gln Glu Glu Ser Thr Ser Glu Gln Leu Pro Ser Ser Leu
 820 825 830
 Ser Ser Pro Gln Asn Asn Lys Gln Ser Glu Arg Ser Lys Glu Lys Val
 835 840 845
 Asp Ile Phe His Val Leu Lys His Ile Lys Asp Ser Lys Ile Lys Met
 850 855 860
 Gly Ile Val Lys Tyr Asp His Ser Asp Ala Leu Gly Glu Asp Asn Val
 865 870 875 880
 Cys Ser Arg Ser Tyr Ser Ser Asn Pro Glu Lys Gln Glu Gly Cys Val
 885 890 895
 Lys Phe Cys Asn Glu Asn Trp Gly Lys Cys Lys Asp Ala Ala Ser Pro
 900 905 910
 Gly Phe Cys Leu Ser Glu Leu Glu Lys Thr Asn Asp Cys Phe Phe Cys
 915 920 925
 Tyr Ile
 930

<210> 70
 <211> 1100
 <212> PRT
 <213> Plasmodium falciparum

<400> 70
 Met Lys Phe His Ile Ser Phe Phe Leu Ile Leu Tyr Ile Val Phe Phe
 1 5 10 15
 Lys Asn Thr Ile Lys Ser Glu Thr Thr Thr Asp Glu Ser Ala Thr Gly
 20 25 30
 Ser Leu Ser Ser Asp Gly Ser Arg Val Thr Thr Gln Ala Arg Ile Glu
 35 40 45
 Lys Pro Lys Gln Gln Pro Thr Leu Pro Thr Leu Ala Gln Glu Thr Gln
 50 55 60
 Pro Gln Gln Gln Gln Gln Gln Lys Glu Val Gly Ser Gly Ile Gly Ala
 65 70 75 80
 Glu Gln Lys Val Glu Ser Ala Arg Pro Gly Ala Glu Val Ser Gln Ser
 85 90 95
 Asp Val Glu Arg Ala Gly Arg Ser Ser Gly Thr Gly Gly Ser Val Gly
 100 105 110
 Thr Lys Ile Ser Pro Gly Ser Gln Gly Gln Gly Lys Val Ala Gly Pro
 115 120 125
 Gln Leu Pro Arg Leu Pro Gln Leu Pro Gln Ser Phe Glu Gln Ser Arg
 130 135 140
 Asn Gln Gln Ser Ser Pro Val Thr Pro Lys Arg Asn Gly Ile Ser Pro
 145 150 155 160
 Thr Asn Ala Lys Ser Pro Glu Ser Val Leu Pro Pro Ala Gln Ser Phe
 165 170 175
 Thr Asn Leu Asn Lys Ser Thr Ile Pro His Thr Ile Pro Ile Lys Ser
 180 185 190
 Ser Phe Leu Lys Tyr Tyr Lys Gly Val Lys Ile Thr Gly Ser Cys Gly

195					200					205					
Val	Gln	Phe	Gln	Leu	Val	Ile	Val	Pro	His	Leu	Phe	Ile	Tyr	Val	Glu
210					215					220					
Thr	Lys	Glu	Asn	Asn	Ile	Gln	Leu	Glu	Pro	Arg	Phe	Met	Lys	Leu	Asn
225				230						235					240
Glu	Arg	Ile	Asp	Phe	Glu	Lys	Asp	Lys	Ser	Asn	Leu	Lys	Asn	Lys	Cys
				245					250						255
Asp	Val	Asn	Lys	Lys	Gln	Ser	Phe	Lys	Phe	Ile	Leu	Tyr	Leu	Gln	His
			260					265					270		
Asp	Leu	Ile	Thr	Ile	Lys	Trp	Lys	Val	Tyr	Glu	Glu	Lys	Pro	Asp	Thr
			275				280						285		
Thr	Thr	Arg	Ile	Asp	Leu	Asn	Val	Asp	Val	Lys	Arg	Tyr	Lys	Leu	Pro
					290					300					
Lys	Leu	Asp	Gln	Pro	Val	Ile	Ser	Ile	Gln	Ile	His	Ser	Leu	Ala	Gln
305				310						315					320
Asp	Gly	Glu	Thr	Tyr	Leu	Met	Glu	Ser	Lys	Asp	Tyr	Asn	Leu	Glu	Asp
				325					330					335	
Gln	Ile	Pro	Glu	Lys	Cys	Glu	Ala	Ile	Ala	Ser	Asp	Cys	Phe	Leu	Ser
				340					345				350		
Gly	Asn	Val	Asp	Ile	Glu	Lys	Cys	Leu	Gln	Cys	Thr	Leu	Leu	Val	Ile
			355				360					365			
Lys	Ala	Asp	Lys	Asn	Asp	Glu	Cys	Leu	Lys	Tyr	Val	Ser	Lys	Asn	Val
			370			375					380				
Lys	Asp	Arg	Phe	Glu	Glu	Ile	Leu	Thr	Lys	Gly	Glu	Asp	Asp	Ala	Asp
385				390						395					400
Ser	Asp	Glu	Tyr	Asp	Phe	Ile	Ala	Pro	Ala	Asn	Tyr	Ile	Leu	Lys	Asn
				405					410					415	
Ile	Tyr	Lys	Lys	Asn	Asp	Thr	Asn	Gly	Lys	Lys	Glu	Leu	Leu	His	Phe
			420					425					430		
Lys	Asp	Ile	Asn	Asn	Asn	Leu	Lys	Leu	Glu	Leu	Ile	Asn	Tyr	Cys	Asn
			435				440					445			
Leu	Leu	Lys	Asp	Asn	Asp	Val	Ser	Gly	Ile	Leu	Thr	Tyr	Glu	Lys	Leu
			450			455					460				
Gly	Asn	Val	Gln	Asp	Ile	Phe	Asn	Asn	Leu	Thr	Lys	Leu	Leu	Glu	Glu
465				470						475					480
His	Lys	Glu	Glu	Asn	Asn	Tyr	Val	Leu	Tyr	His	Lys	Met	Lys	Asn	Glu
				485					490					495	
Val	Leu	Cys	Leu	Lys	Asn	Ala	Asn	Asp	Trp	Met	Lys	Asn	Lys	Thr	Gly
			500					505					510		
Leu	Val	Leu	Pro	Gln	Leu	Lys	Tyr	Ser	Leu	Asn	Lys	Phe	Asn	Lys	Asn
			515				520					525			
Lys	Glu	Asn	Tyr	Ile	Lys	Glu	Asn	Ile	Phe	Glu	Glu	Asp	Glu	Asn	Gly
			530			535					540				
Ile	Val	Asp	Leu	Thr	Lys	Phe	Pro	Val	Asp	Thr	Ser	Tyr	Ser	Ser	Tyr
545				550						555					560
Asn	Tyr	Ala	Asp	Ser	Leu	Tyr	Cys	Asn	Arg	Glu	Tyr	Cys	Asn	Arg	Leu
				565					570					575	

Lys Asp His Asn Asn Cys Ile Ser Lys Ile Asn Val Glu Asp Gln Lys
 580 585 590
 Asn Cys Ala Leu Ser Trp Ala Phe Ala Ser Ile Tyr His Leu Glu Thr
 595 600 605
 Ile Lys Cys Met Lys Gly Tyr Glu Pro Leu Asn Ala Ser Val Leu Tyr
 610 615 620
 Val Thr Asn Cys Leu Lys Asn Lys Asn Asn Asp Val Cys Thr Glu Gly
 625 630 635 640
 Ser Asn Pro Leu Val Phe Leu Glu Thr Ile Glu Glu Lys Gly Phe Leu
 645 650 655
 Pro Thr Glu Ser Asn Tyr Pro Tyr Asp Gln Ser Lys Val Gly Asp Val
 660 665 670
 Cys Pro Gln Val Gln Asn Asp Trp Asp Asn Val Phe Glu Asn Thr Lys
 675 680 685
 Val Leu Glu Tyr Asn Asn Ala Pro Phe Ser Val Gly Thr Lys Gly Tyr
 690 695 700
 Ile Ala Tyr Glu Ser Glu Val Phe Gln Lys Asp Ile Asp Ser Phe Val
 705 710 715 720
 Lys Leu Ile Lys Asp Glu Ile Met Asn Lys Gly Ser Val Ile Ala Tyr
 725 730 735
 Val Lys Ala Lys Asn Val Leu Gly Tyr Glu Leu Asn Gly Lys Lys Val
 740 745 750
 Gln Asn Leu Cys Gly Asp Lys Lys Pro Asp His Ala Val Asn Ile Val
 755 760 765
 Gly Tyr Gly Asn Tyr Ile Asn Asn Lys Gly Glu Lys Lys Ser Tyr Trp
 770 775 780
 Ile Val Arg Asn Ser Trp Gly Lys Tyr Trp Gly Asp Asp Gly Tyr Phe
 785 790 795 800
 Lys Val Asp Met Tyr Gly Pro Pro Thr Cys Glu Asp Asn Phe Ile His
 805 810 815
 Ser Val Val Val Phe Asn Val Glu Val Pro Val Asn Glu Asn Phe Asp
 820 825 830
 Lys Lys Glu His Asp Ile Tyr Lys Ser Tyr Leu Lys Asn Ser Pro Asp
 835 840 845
 Phe Tyr His Asn Ile Tyr Tyr Lys Asn Tyr Asn Phe Glu Asn Tyr Val
 850 855 860
 Ser Pro Ile Ser Thr Trp Ser Glu Val Leu His Asn Thr Leu Tyr Asn
 865 870 875 880
 Asn Asn Leu Ile Trp Gly Gln Glu Thr Thr Asp Pro Ile Gly Glu Gly
 885 890 895
 Lys Leu Pro Ala Ser Glu Ala Gly His Leu Arg Gly Glu Gly Lys Gly
 900 905 910
 Asn Ser Glu Glu Asn Gln Gly Gln Arg Ser Asn Ala Asn Gly Ala Ile
 915 920 925
 Ser Ser Asn Gln Ser Thr Gly Gly Lys Ile Thr Lys Gln Gly Glu Ser
 930 935 940

Lys Asp Asp Gly Val Ala Leu Pro Val Ser Thr Asp Gly Lys Pro Asn
 945 950 955 960
 Thr Ser Ser Ser Val Val Asp Thr Asn Asp Gln Arg Ser Leu Pro Asn
 965 970 975
 Pro Arg Ala Thr Ser Leu Gln Pro Pro Ser Val Gln Ile Pro Asn His
 980 985 990
 Glu Gly Thr Ser Ala Pro Gly Asn Ser Arg Thr Pro Ser Ile Val Ser
 995 1000 1005
 Pro Thr Ala Ala Glu Lys Ser Arg Lys Ala Gln Ile Phe His Val Leu
 1010 1015 1020
 Lys His Ile Lys Asn Ser Arg Ile Lys Met Gly Leu Val Lys Tyr Asp
 1025 1030 1035 1040
 Asn Ser Asp Asn Ile Gly Gly Asp His Val Cys Ser Arg Thr Tyr Ala
 1045 1050 1055
 Val Asn Pro Glu Lys Gln Glu Glu Cys Val Lys Phe Cys Glu Glu Asn
 1060 1065 1070
 Trp Glu Asn Cys Lys Asn Lys Pro Ser Pro Gly Tyr Cys Leu Ala Lys
 1075 1080 1085
 Leu Lys Asn Thr Asn Glu Cys Phe Phe Cys Tyr Val
 1090 1095 1100

<210> 71
 <211> 1004
 <212> PRT
 <213> Plasmodium falciparum

<400> 71
 Met Met Lys Leu Asn Arg Asn Val Leu Phe Lys Lys Gly Glu Lys Ile
 1 5 10 15
 Thr Tyr Ser Val Lys Ser Val Ile Phe Ile Ile Asn Val Ile Arg Thr
 20 25 30
 Arg Gly Glu Glu Asp Asp Asp Asn Asn Asn Ile Ser Gly Lys Ser Ile
 35 40 45
 Leu Gly Thr Ser His Asn Asn Ile Ser Asn Ile Asp Leu Ser Ser Ile
 50 55 60
 Pro Asn Leu Asp Ser Asn Ile His Ala Ser Phe Ser Ser Asp Thr Lys
 65 70 75 80
 Glu Trp Ser Pro Asn Asn Leu Thr Ser Lys Lys Lys Lys Lys Lys
 85 90 95
 Glu Ile Arg Pro Lys Asp Ile Met Ser Asn Ser Asp Ser Ser Asn Thr
 100 105 110
 Ser Ser Ile Asn Lys Gln Asn Asn Asn Gln Ile Lys Ser Val Leu Leu
 115 120 125
 Lys Glu Asn Lys Gly Val Lys Ile Thr Gly Pro Cys Asn Val Asn Leu
 130 135 140
 Ser Ile Phe Leu Val Pro His Ile Tyr Ile Asp Val Glu Thr Lys Tyr
 145 150 155 160
 Asn Asn Ile Glu Leu Lys Tyr Glu Leu Asp Glu Phe Ser Asp Ser Ile
 165 170 175

Lys Phe Lys Asp Thr Thr Thr Glu Leu Arg Thr Ser Asp Asp Thr Leu
 180 185 190
 Met Asn Thr Asn Phe Asn Val Gly Val Ser Arg Asp Thr Leu Asp Lys
 195 200 205
 Asp Arg Leu Tyr Asn Ile Cys Ala Glu Asn Lys Thr Phe Lys Phe Val
 210 215 220
 Val Tyr Ile Lys Asp Asn Ile Leu Thr Leu Lys Trp Lys Val Tyr Glu
 225 230 235 240
 Thr Gly Val Thr Asn Asn Lys Val Asp Ile Arg Gln Tyr Lys Met Lys
 245 250 255
 Glu Leu Thr Arg Pro Ile Thr Thr Ile Gln Ile His Ser Val Ser Glu
 260 265 270
 Asn Lys Asp Thr His Leu Leu Glu Ser Lys Asn Tyr Val Ile Lys Thr
 275 280 285
 Asp Ile Pro Glu Thr Cys Asp Val Met Ala Thr Asn Cys Phe Leu Ser
 290 295 300
 Gly Asn Ile Asn Ile Glu Lys Cys Leu Glu Cys Thr Leu Leu Val Gln
 305 310 315 320
 Asn Asn Asp Thr Ser Ser Glu Cys Phe Thr Tyr Val Ser Asn Asp Val
 325 330 335
 Arg Glu Asn Phe Asn Gln Ile Lys Ala Glu Ala Glu Asp Asp Glu Asn
 340 345 350
 Phe Arg Asn Tyr His Leu Thr Asp Thr Ile Asn Asn Ile Leu Lys Arg
 355 360 365
 Ile Tyr Lys Ile Asn Lys Asn Glu Gly Lys Lys Glu Leu Ile Thr Leu
 370 375 380
 Glu Glu Leu Asp Asn Phe Leu Lys Glu Ser Ile Thr Asp Tyr Cys Lys
 385 390 395 400
 Ile Leu Arg Glu Ile Asp Thr Asn Gly Thr Leu Val Asn His Glu Leu
 405 410 415
 Gly Asn Asn Val Asp Val Phe Asn Asn Leu Ile Arg Leu Leu Lys Leu
 420 425 430
 His Lys Asn Glu Ser Ile Ser Thr Leu His Asn Lys Leu Arg Asn Ser
 435 440 445
 Ala Ile Cys Met Lys Tyr Pro Asp Lys Trp Ile Glu Lys Lys Thr Gly
 450 455 460
 Leu Ile Leu Pro Asn Val Val Asn Asn Asn Ile Ile Tyr Asn Asn Lys
 465 470 475 480
 Tyr Glu Lys Leu Asn Glu Glu Lys Lys Arg Lys Ile Tyr Asp Asn Lys
 485 490 495
 Asp Asp Ser Lys Ile Ser Asp Ile Ile Asn Ile Lys Lys Tyr Ile Phe
 500 505 510
 Thr Asn Asn Thr Leu Lys Tyr Phe Asn Asn Asp Lys Gln Phe Cys Asn
 515 520 525
 Ser Ser Phe Cys Asn Arg Leu Lys Asp Glu Asn Asn Cys Ile Ser Lys
 530 535 540
 Ile Gln Ile Glu Asp Gln Gly Asn Cys Ala Ile Ser Trp Ile Phe Ala

545 550 555 560
 Ser Lys Tyr Tyr Leu Glu Thr Leu Lys Cys Met Lys Gly Tyr Glu Pro
 565 570 575
 His Ala Ile Ser Ala Leu Tyr Ile Ala Asn Cys Ser Lys Arg Lys His
 580 585 590
 Lys Asn Arg Cys Asn Val Gly Ser Asn Pro Leu Glu Phe Leu Gln Ile
 595 600 605
 Ile Glu Glu Asn Gln Phe Leu Pro Met Asp Thr Asn Tyr Leu Tyr Ser
 610 615 620
 Tyr Thr Lys Val Gly Asn Asp Cys Pro Asp Glu Glu Lys Asn Trp Val
 625 630 635 640
 Asn Leu Leu Lys His Thr Arg Met Leu Asn Tyr Asn Asn Lys His Arg
 645 650 655
 Ser Thr Leu Ser Thr Lys Ala Tyr Arg Ala Tyr Glu Ser Glu His Phe
 660 665 670
 Lys Asp Lys Met Asp Thr Phe Ile Lys Leu Ile Lys Asp Glu Ile Met
 675 680 685
 Asn Asn Gly Ser Val Ile Ala Tyr Val Lys Ala Glu Asn Val Leu Gly
 690 695 700
 Tyr Glu Leu Asn Gly Lys Asn Val Gln Asn Leu Cys Gly Asp Lys Thr
 705 710 715 720
 Pro Asp His Ala Val Asn Ile Val Gly Tyr Gly Asn Tyr Ile Asn Asp
 725 730 735
 Glu Asp Glu Lys Lys Ser Tyr Trp Ile Val Arg Asn Ser Trp Gly Lys
 740 745 750
 Tyr Trp Gly Asp Glu Gly Tyr Phe Lys Val Asp Met Tyr Gly Pro Ser
 755 760 765
 Thr Cys Glu Asp Asn Phe Ile His Thr Val Val Val Phe Asn Ile Asn
 770 775 780
 Met Pro Lys Ser Lys Lys Ser Pro Val Lys Ile Thr Phe Pro Leu Tyr
 785 790 795 800
 Asn Tyr Tyr Leu Lys Tyr Ser Pro Asp Phe Tyr His Asn Leu Tyr Tyr
 805 810
 Lys Asn Phe Asn Ser Lys Lys Ser Met Lys Leu Val Asn Ala Ser Asp
 820 825 830
 Glu His Lys Asn Ile Tyr Ser Gln Glu Asp Lys Val Asn His Lys Lys
 835 840 845
 Gly Ser Lys Ile Leu Asn Ser Glu Val Thr Thr Ser Leu Leu Ser Gln
 850 855 860
 Glu Ile Ser Gln Arg Arg Gly Glu Asp Asp Asp Ile Asp Thr Leu Ile
 865 870 875 880
 Gly Asp Ser Pro Asp Ile Asn Glu Gln Glu Lys Asn Ile Lys Asp Glu
 885 890 895
 Phe Asn Lys Ser Ser Ile Thr His Asn Ser Val Ser Ser Ser Asn Ile
 900 905 910
 Thr Lys Ser Asn Lys Asn Thr Asn Lys Val Lys Ile Tyr His Ile Ile
 915 920 925

Lys His Val Lys Asn Thr Lys Ile Lys Ile Gly Phe Val Lys Tyr Asp
 930 935 940
 Asn Tyr Asn Thr Ile Gly Thr Asn His Thr Cys Ser Arg Ser Tyr Ser
 945 950 955 960
 Glu Asp Gln Glu Lys His Glu Gly Cys Ile Lys Phe Cys Glu Leu His
 965 970 975
 Trp Asn Glu Cys Lys Asp Lys Thr Ser Pro Gly Tyr Cys Leu Thr Lys
 980 985 990
 Leu Lys Gly Ser Asn Glu Cys Phe Phe Cys Tyr Val
 995 1000

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 <211> 1247
 <212> PRT
 <213> Plasmodium falciparum

<400> 72
 Met Cys Thr Tyr Gly Ile Tyr Ser Asp Asn Lys Phe Leu Ile Lys Ser
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 Asn Tyr Lys Asp Asn Phe Tyr Ile Arg Asn Lys Cys Ile Gly Ala Leu
 20 25 30
 Glu Leu Lys Gly Ile Tyr Asp Asn Ile Asn Tyr Arg Ser Phe Phe Cys
 35 40 45
 Lys Asn Lys Ser Leu Ile Ser Pro Val Tyr Leu Arg Gly Asp Ile Ile
 50 55 60
 Tyr Asn Asn Asp Leu Ser Lys Glu Lys Asn Asn Lys Gln Ser Tyr Tyr
 65 70 75 80
 His Met Asn Asn Lys Arg Ser Lys Glu Asn Ser Gly Phe Tyr Asn Ser
 85 90 95
 Glu Ile Asn Ala Ile Asn Asp Ile Met Ile Gly Tyr Glu Asn Glu Gly
 100 105 110
 Gly Lys Lys Lys Val Gln Arg Gln Lys Lys Tyr His Gln Glu Asn Asp
 115 120 125
 Glu Arg Asp Ala Tyr Lys Arg Asn Asn Ala Lys Tyr Glu Glu Asp Asp
 130 135 140
 Asn Arg Glu Gln Val Glu Lys Asn Asn Glu Gly Glu Lys Asn Asp Glu
 145 150 155 160
 Gly Gly Lys Lys Gly Glu Gly Glu Lys Lys Gly Glu Gly Glu Lys Lys
 165 170 175
 Gly Glu Gly Glu Lys Lys Asp Glu Gln Glu Glu Gln Ile Gln Leu Asp
 180 185 190
 Glu Asp Trp His Ser Asp Arg Gly Ala Asn Lys Asn Pro Ser Arg Asp
 195 200 205
 Thr Tyr Asn Lys Ile Ile Asn Asn Asn Tyr Phe Arg Leu Lys Glu Ile
 210 215 220
 Tyr Met Lys Glu Glu Ser Asp Leu Leu Asn Glu Asn Asn Asp Lys Asn
 225 230 235 240
 Lys His Gly Asp Phe Tyr Asn Ile Lys Ser Asp Asp Leu Asn Asn Ser
 245 250 255

140

Asn Ile Gly Val Arg Gln Arg Lys Arg Lys Lys Lys Lys Lys Glu Lys
 260 265 270
 Ile Lys Ala Lys Arg Arg Lys Asn Lys Gly Tyr Val Tyr Glu Val Glu
 275 280 285
 Asp His Leu Asp Asn Ile Thr Leu Phe Asn Ile Tyr Glu Asp Asn Ile
 290 295 300
 Ala Leu Tyr Asn Tyr Val Phe Asn Leu Asp Val Lys Asn Phe Leu Tyr
 305 310 315 320
 Lys Lys Gly Leu Leu Asp Asn Ser Tyr Lys Met Gly Asn Asn Asn Gln
 325 330 335
 Leu Glu Asn Lys Asn Lys Asn Asn Asn Ile Ile Met Asn Asn Leu
 340 345 350
 Asn Ala Pro Cys Leu Ile Asn Ser Val Ser Ser Glu Arg Ile Met Asn
 355 360 365
 Thr Glu Tyr Gln His Gly Thr Gln Lys Cys Ile Asp Asn Ile Lys Asn
 370 375 380
 Asp Ile Asn Glu Lys Arg Tyr Asn Asp His Asp Asp His Ile Ile Asn
 385 390 395 400
 Val Glu Gln Glu Asn Asn Ile Ser His Val Phe Asn Lys Lys Leu Phe
 405 410 415
 Glu Lys Asn Ile Tyr Asn Gly Ser His Pro Asn Glu Lys Arg His Ser
 420 425 430
 Leu Gln Asn Asp Leu Pro Glu Ser Asn Asp Lys Ile Val Lys Ser Ser
 435 440 445
 Ser Asn Asn Asp Tyr Ser Phe Glu Ser Thr Ile Arg Asn Glu Ile Asp
 450 455 460
 Lys Leu Asp Asn Asp Asp Val Asp Asn Asn Asn Thr Asn Lys Trp Asn
 465 470 475 480
 Glu Ile Lys Lys Arg Lys Lys Lys Phe Lys Arg Glu Lys Asn Lys Ile
 485 490 495
 Ile Asn Asn Ser Phe Gln Asn Gln Glu Ala Glu Asp Asp Lys Asn Asn
 500 505 510
 Asn Asn Asn Asp Asn Asn Asn Asp Asn His Asn Asp Asn Asn Asn Glu
 515 520 525
 Asn Asn Asn Glu Asn Asn Asn Asp Asn Asn Asn Glu Asn Asn Asn Asp
 530 535 540
 Ile Asn Asn Asp Ile Asn Asn Ile His Asn Asn Asp Asn Asn Tyr Tyr
 545 550 555 560
 Asn Asn Asp Asn Ile Asn Leu Tyr Asn Glu Met Thr Lys Lys Lys Cys
 565 570 575
 Met Leu Asp Asn Ser Tyr Thr Lys Tyr Phe Phe Tyr Ile Phe Thr Leu
 580 585 590
 Asp Met Leu Pro Ser Ile Lys Phe Glu Thr Phe Tyr Glu Lys Asn Thr
 595 600 605
 Asp His Lys Asn Phe Asn Glu Asn Tyr Lys Phe Tyr Tyr Asn Thr Asp
 610 615 620

Asp Asp Thr Asp Ile Ile Asn Ala Ile Lys Lys Lys Asn Val Lys Asn
 625 630 635 640
 Lys Lys Lys Asn Gly Asn Ile Val Ile Lys Asn Tyr Ile Asn His Asn
 645 650 655
 Glu Tyr Ser Tyr Leu Glu Tyr Asn Glu Asn Lys Asn Tyr Glu Ile Asn
 660 665 670
 Lys Lys Glu Lys Leu Leu Thr Glu Asn Tyr Glu Tyr Asp Met Tyr Ile
 675 680 685
 Lys Asp Asn Ile His Tyr Asn Asp Tyr Ser Glu Gly Asp Gly Lys Gln
 690 695 700
 Thr Lys Lys Ala Ser Ser Phe Leu Tyr Asn Asn Asn Asn Asn Asn Lys
 705 710 715 720
 Tyr Lys Lys Glu Asp Asn Lys Thr Gln Ile Ile Ser Tyr Met Asp His
 725 730 735
 Val Asp Asn Glu Asn Gly Val Lys Gly Leu Lys Lys Arg Asn Leu Phe
 740 745 750
 Tyr Asn Asn Ser Asp Gln Leu Tyr Asn Phe Asp Val Lys Asp Asn Asp
 755 760 765
 Met Ile Lys Tyr Glu Lys Arg Gln Ser Lys Asn Phe Val Glu Glu Glu
 770 775 780
 Phe Ile Asn Gly Asn Arg Lys Met Glu Asn Glu Asp Lys His Leu Lys
 785 790 795 800
 Lys His Tyr Asp Glu Asn Asp Ile Lys Lys Lys Lys Arg Lys Lys Glu
 805 810 815
 Lys Glu Glu Lys Gln Gln Lys Ser Lys Ser Lys Asn Thr Tyr Leu Asn
 820 825 830
 Asn Leu Ser Arg Ser Tyr Ile Tyr Leu Ile Lys Arg Ile Asn Leu Phe
 835 840 845
 Ser Glu Asn Asn Asn Glu Val Asp Ile Ile Tyr Glu Lys Ile Asn Lys
 850 855 860
 Ala Phe Ile Asp Leu Tyr Asn Ile Phe Ile Phe Tyr Ile Phe Ile His
 865 870 875 880
 Asn Leu Phe Pro Cys Cys Ile Cys Ser Ile Arg Leu His Phe Ser Phe
 885 890 895
 Ile Ser Phe Asp Ile Leu Glu Ile Met Leu Thr Gly His Leu Ile Lys
 900 905 910
 Val Lys Asn Asn Asn Ala Ile Asn Leu Glu Leu Gln Asn Met Asn Lys
 915 920 925
 Ser Val Gln Glu Asn Leu Leu Lys His Phe Phe Lys His Leu Glu Asn
 930 935 940
 Tyr Tyr Ile Glu Lys Ser Glu Leu Phe Asn Tyr Thr Asn Met Phe Ser
 945 950 955 960
 Asn Asn Ile Asp Lys Val Ile Leu Lys Arg Lys Thr Lys Ser Asp Ile
 965 970 975
 Ser Gln Phe Gly Tyr Met Thr Lys Arg Arg Thr Ser Met Met Lys Ser
 980 985 990
 Gln Arg Asn Ile Trp Thr Phe Leu Phe Thr Lys Ile Phe His Ser Pro

995 1000 1005
 Leu Phe Asn Phe Thr Ser Lys Ile Lys Asn Leu Phe Leu Lys Lys Asn
 1010 1015 1020
 Lys Asn Lys Asn Lys Ile Lys Asn Lys Asn Lys Asn Lys Asn Lys Asn
 1025 1030 1035 1040
 Lys Lys Thr Gln Ile Gln Ile Gln Ile Gln Ile Gln Lys Glu Leu Glu
 1045 1050 1055
 Lys Glu Lys Glu Lys Glu Lys Glu Lys Tyr Lys Gln Lys Lys Asn Asn
 1060 1065 1070
 Asn Asn Asn Asn Asn Ile Lys Ser Pro Ile His Lys Asn Ile Asp Ser
 1075 1080 1085
 Lys Glu Ile Glu Lys Gln Asn Lys Lys Lys Asn Lys Leu Gln Leu Leu
 1090 1095 1100
 Leu Lys Lys Thr Asp Lys Lys Asn Val Asn Pro Ser Gln Ile Asn Asn
 1105 1110 1115 1120
 Asn Ile Asn Asp Ser Ile Phe Leu Phe Asp Gln Leu Lys Asn Tyr Ile
 1125 1130 1135
 Ile Leu Glu Asn Arg Lys Ile Phe Phe Glu Asn His Met Glu Asn Glu
 1140 1145 1150
 Phe Ser Ser Ile Ile Ile Thr Pro Leu Asn Val Leu Pro His Val Ile
 1155 1160 1165
 Ile Lys Lys Tyr Phe Gly Val Ile Ser Leu His Ile Val Lys Glu Asn
 1170 1175 1180
 Ile Asn Leu Lys Lys Phe Asp Phe Phe Tyr Gln Ser Leu Ile Ser Asp
 1185 1190 1195 1200
 Ile Leu Phe Ile Ala Lys Ser His Ile Lys Asn Ile Gly Ala Asn Leu
 1205 1210 1215
 Ile Ser Ser Phe Lys Ile Thr Asn Leu Phe Leu Arg Glu Glu Lys Ser
 1220 1225 1230
 His Gly Tyr Ala Leu Ile Ser Ile Cys Gly Asp Val Ala Lys Phe
 1235 1240 1245

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 <212> PRT
 <213> Plasmodium falciparum

<400> 73
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 1 5 10 15
 Lys Asp Lys Pro Trp Asp Asn Glu Asn Ile Asp His Trp Lys Val Glu
 20 25 30
 Lys Phe Thr Gln Glu Asp Asn Lys His His Phe Leu Glu Glu Ser Ser
 35 40 45
 Phe Lys Val Leu Phe Pro Lys Tyr Arg Glu Lys Tyr Leu Gln Gln Phe
 50 55 60
 Ser Ser Asp Ile Lys Asn Val Leu Asn Lys His Phe Ile Lys Phe Glu
 65 70 75 80
 Ile Asp Leu Ile Glu Gly Tyr Met Cys Val Lys Thr Thr Lys Lys Thr

85

90

95

Phe Asp Pro Tyr Ile Ile Ile Lys Ser Arg Asp Met Ile Ser Leu Leu
 100 105 110
 Ser Arg Ser Val Pro Phe Val His Ala Lys Arg Val Leu Glu Asp Glu
 115 120 125
 Thr Tyr Cys Asp Ile Ile Lys Ile Ser Gly Tyr Val Arg Asn Lys Asn
 130 135 140
 Lys Phe Ile Lys Arg Arg Gln Arg Leu Leu Gly Ser Asn Ala Thr Thr
 145 150 155 160
 Leu Lys Ala Leu Glu Ile Leu Thr Asn Cys Tyr Ile Cys Ile His Gly
 165 170 175
 Lys Thr Val Ser Val Ile Gly His Phe Lys Ser Leu Lys Val Val Arg
 180 185 190
 Arg Ile Ile Ile Asp Cys Met Lys Asn Ile His Pro Val Tyr His Ile
 195 200 205
 Lys Glu Leu Ile Ala Lys Arg Glu Leu Glu Lys Asn Glu Glu Phe Lys
 210 215 220
 Asn Glu Asn Trp Glu Lys Phe Leu Pro Asn Phe Lys Lys Arg Asn Val
 225 230 235 240
 Gln Arg Lys Lys Ile Lys Glu Lys Leu Asp Lys Lys Lys Lys Lys Asn
 245 250 255
 Lys Ser Val Phe Pro Pro Asp Gln Leu Pro Arg Lys Ile Asp Ile Gln
 260 265 270
 Met Glu Thr Gly Glu Tyr Phe Leu Asn Asn Gln Lys Asn Lys Lys Lys
 275 280 285
 Asp Lys Thr Gln Asp Lys Gln Gln Lys Gly Asn Asp
 290 295 300

<210> 74

<211> 1802

<212> PRT

<213> Plasmodium falciparum

<400> 74

Met His Phe Tyr Lys Arg Ile Lys His Tyr Arg Asn Ile Leu Ile Lys
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 Cys Asn Ile Ser Asn His Asn Ile Ile Tyr Gly Gly Tyr Asp Thr Cys
 20 25 30
 Pro Leu Lys Glu Ile Tyr Thr Asn Tyr His Val Tyr Lys Ser Tyr Ile
 35 40 45
 His Thr Lys Glu Asn Ile Ile Lys Val Glu Ala Lys Glu Asn Val Asp
 50 55 60
 Ile Asp Asn Ile Asn Asn Lys Asp Asp Ile Phe Tyr Asn Asn Asp His
 65 70 75 80
 Lys Ile Asp Asp Asp Lys Ile Lys Lys Ile Gln Cys Gln Lys Asn Cys
 85 90 95
 Thr Ile Tyr His Asp Ile Glu Lys Asn Ser Tyr Val Asp Ile Asp Asp
 100 105 110
 Phe Val Asn Ile Asn Asp Ala Lys Asn Lys Ile Glu Asn Leu Leu Leu

144

115					120					125					
Tyr	Ser	Lys	Lys	Leu	Tyr	Asn	Lys	Lys	Tyr	Cys	His	Asn	Lys	Leu	Leu
130					135					140					
Asn	Asn	Lys	Gln	Ile	Thr	Leu	Asn	Asn	Ile	Val	Leu	Asn	Ile	Leu	Ser
145					150					155					160
Ile	Ile	Asn	Gly	Lys	Asn	Asn	Asn	Asn	Asn	Ile	Lys	Asp	Ile	Tyr	Ile
				165					170					175	
Asp	Lys	Val	Leu	Leu	Leu	Asp	Phe	Tyr	Thr	Leu	Leu	Ile	Lys	Arg	Lys
			180					185					190		
Tyr	Tyr	Ile	His	Asn	Leu	Arg	Asn	Asn	Ile	Tyr	Asp	Asn	Ser	Phe	Met
		195					200					205			
Asn	Ile	Phe	Asp	Tyr	Ile	His	Tyr	Asn	Ile	Asn	Leu	His	Leu	Lys	Asn
		210					215					220			
Tyr	Asn	Leu	Lys	Asn	Thr	His	Gln	Val	Leu	His	Asn	Ile	Ser	Ile	Tyr
					230					235					240
Ile	His	Lys	Asn	Lys	Cys	Asn	Asn	Ile	Thr	His	Glu	Leu	Val	Thr	Asn
				245					250					255	
Ile	Phe	Phe	Phe	Ser	Phe	Phe	Lys	Asn	Phe	Asn	Lys	Phe	Tyr	Thr	Lys
			260					265					270		
Lys	Glu	Gly	Lys	Asp	Lys	Asn	Glu	Ser	His	Glu	Asn	Phe	Pro	Asn	Tyr
		275					280					285			
Val	Asn	Gln	Lys	Asn	His	Asn	Asp	Leu	Asn	Ile	Lys	Ile	Thr	Asn	Asn
					295							300			
Phe	His	Cys	Thr	Met	Tyr	Gln	Thr	Asn	Tyr	Tyr	Lys	Tyr	Lys	Ser	Phe
					310					315					320
Asp	Glu	Glu	Thr	Phe	Lys	Tyr	Leu	Asn	Thr	Tyr	Val	Val	Phe	Leu	Ser
				325					330					335	
Asn	His	Pro	Ser	Phe	Ile	Asn	Asp	Lys	Leu	Leu	Tyr	Asn	Ile	Ser	Leu
			340					345					350		
Leu	Thr	Asn	Lys	Ile	Leu	Gln	Leu	Lys	Ile	Asn	Phe	Asn	Leu	Ala	Leu
				355				360					365		
Ser	Phe	Leu	Ser	Ala	Ser	Leu	Asn	Ile	Phe	Asp	Lys	Arg	Glu	Lys	Lys
					375							380			
Ile	Lys	Glu	Gly	His	Leu	Ile	Leu	Asn	Ile	Tyr	Lys	Lys	Lys	Thr	Asn
				390						395					400
Tyr	Asp	Ile	Leu	Tyr	Ser	Leu	Ile	Lys	Gln	His	Asn	Glu	Met	Phe	Asn
				405					410					415	
Lys	Asn	Ile	Asp	His	Lys	Val	Glu	Gly	Glu	Gln	Lys	Val	Ile	Gln	Gln
				420				425					430		
Asp	Val	Ala	Met	Asp	Gly	Ile	Ile	Ser	Met	His	Val	Ser	Gly	Ala	Asn
				435				440					445		
Gln	Asn	Val	His	Asn	Ile	Ile	Arg	Thr	Asn	His	Asn	Ile	Asp	Lys	Ile
				450				455					460		
Ser	Glu	Thr	Asn	Gln	Asn	Val	His	Asn	Ala	Ile	Arg	Thr	Asn	His	Asn
				470						475					480
Ile	Asp	Lys	Ile	Ser	Glu	Thr	Asn	Gln	Asn	Val	His	Asn	Ile	Ile	Arg
				485					490					495	

Thr Asn His Asn Ile Asp Lys Ile Ser Glu Thr Asn Gln Asn Val His
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 Asn Ile Ile Arg Thr Asn His Asn Ile Asp Lys Ile Ser Glu Thr Asn
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 Gln Asn Val His Asn Ile Ile Arg Thr Asn His Asn Ile Asp Lys Ile
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 Ser Glu Thr Asn Gln Asn Val His Asn Ile Ile Arg Thr Asn His Asn
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 Ile Asp Lys Ile Ser Glu Thr Asn Gln Asn Val His Asn Ile Ile Arg
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 Thr Asn His Asn Ile Asp Lys Ile Ser Glu Thr Asn Gln Asn Val His
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 Gln His Ile His Asn Val Ser Lys Pro Lys Leu Asp Ile Leu Ser Glu
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 His Ile Lys Asn Arg Tyr Thr His Asn Phe Val Pro Ser Lys Asn Asp
 645 650 655
 Cys Ile Asn Leu Trp Asn Tyr Ser His Ile Ile Asn Ile Ile Lys Ile
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 Leu Asp Ile Asn Lys Leu Leu Ser Lys Asn Tyr Asn Ile Asn Thr Glu
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 Glu Cys Val Lys Thr Phe Leu Lys Tyr Met Phe Asp Tyr Leu Ser Ile
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 Tyr Tyr Asp Glu Leu Val Ile Ile Thr Gln Asn Glu Leu Asn Ser Phe
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 Val Ser Ile Tyr Val Asn Leu Ser Ile Leu Leu Asp Gln Leu Arg Asn
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 Tyr Glu Glu Ile Cys Ser Leu Ile Ile Phe Phe Leu Ile Asn Ser Tyr
 740 745 750
 Lys Arg Ile Tyr Val Tyr Phe Asn Gly Leu Asn Ile Asn Met Met Ile
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 Asn Leu Ile Lys Gly Ile Tyr His Gln Ile Tyr Ile Tyr Ser Lys Ile
 770 775 780
 Phe Glu Asp Asn Asn Leu Phe Phe Asp Lys Phe Lys Lys Glu Leu Ile
 785 790 795 800
 Thr Leu Tyr Asn Asn Ile Lys Thr Asp His Met Ile Ser Ser Asn Tyr
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 Asn Ile Cys Asn Thr Ile Phe Asp Asn Pro Phe Lys Lys Asp Thr Tyr
 835 840 845
 Ile Pro Leu Asn Lys Leu Ile Thr Ile Ile His Tyr Leu Asp Lys Ile
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 Gln Asp Ile Leu Lys Cys Leu Lys Phe Cys Glu Lys Met Phe Leu Ser
 885 890 895
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 Ile Leu Ile Asn Ile Tyr Ile Tyr Tyr Tyr Gln Lys Phe Leu His Ser
 915 920 925
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 1075 1080 1085
 Thr His Trp Asn Leu Ser Ser Ser Leu Ile Gln Tyr Asn Lys Ile Leu
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 Tyr Thr Ser Ser Lys Cys Thr Lys Phe Pro Phe Asn Ile His Asp Phe
 1140 1145 1150
 Lys Lys Tyr Ser Ile Asn Ile Tyr Phe Leu Val Tyr Asp Asn Ile Leu
 1155 1160 1165
 Ser Tyr Asn Lys Lys Ile Asn Lys Glu Glu Ile Glu Lys Ile Trp Asn
 1170 1175 1180
 Ile Leu Asp Asn Met Ile Lys Tyr Lys Gln Asn Val Leu Thr Glu Asp
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 Asn Phe Tyr Tyr Ile Ile Ser Ala Leu Leu Lys Ala Gln Asn Phe Glu
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 His Glu Val Tyr Lys Met Tyr Tyr Glu Tyr Met Lys Lys Cys Gly Ser
 1220 1225 1230
 Cys Ile Asn Ile Lys Tyr Val Phe Phe Ile Met Lys Arg Ile Phe Glu

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Lys Glu Asn Ile Leu Asn Asn Ser Ile Lys Lys Tyr Asn Ile Gly Ser 1265	1270	1275 1280
Thr Tyr Tyr Tyr Asn Met Lys Cys Asp Lys Tyr Gly Lys Cys Asn Lys 1285	1290	1295
Tyr Asp Asn Tyr Asp Lys Tyr Asn Ile Leu Asn Asp Ile Ile Lys Leu 1300	1305	1310
Ser Glu Gln Ile Ile Leu Ser His Ile His Tyr Ile Lys Asn Phe Thr 1315	1320	1325
Phe Phe Lys Glu Val Leu His Thr Tyr Met Lys Lys Asp Ile Tyr Ile 1330	1335	1340
Lys Cys Tyr Leu Phe Tyr Tyr Pro His Phe His Asn Phe Val Leu Thr 1345	1350	1355 1360
Tyr Phe His Lys Phe Leu Thr His Asp Gln Phe Asn Lys Asn Val Leu 1365	1370	1375
Val Leu Leu Ile Asn Asn Ile Ala Ser Phe Tyr Tyr Thr Leu His Asn 1380	1385	1390
Asn Thr Tyr Thr Ser Ser Tyr Ile Ile Arg Lys Lys Asp Thr Gln Arg 1395	1400	1405
Glu Tyr Glu Lys Ile Ile Lys Glu Lys Lys Ile Ile Glu His Asn Asn 1410	1415	1420
Gln Lys Asn Lys Glu Lys Leu Ile Asn His Tyr Glu Asp Ile Asn Ile 1425	1430	1435 1440
Leu Asp Glu Glu Asn Phe Lys Gly Asp His Lys Asp Ile Lys Val Leu 1445	1450	1455
Lys Lys Tyr Lys Asn Gly Tyr Tyr Tyr Ser Lys Ile Phe Ser Leu Tyr 1460	1465	1470
Pro Leu Asp Gln Ile His Leu Asn Ile Glu Leu Lys Lys Glu Glu Met 1475	1480	1485
Val Ala Lys Asp Lys Thr Asn Gln Gly Asn Ile Gly Ser Asn Leu Leu 1490	1495	1500
Leu Thr Gly Ala Ser Lys Asp Ile Thr Ser Tyr Asn Tyr Tyr Ile Asp 1505	1510	1515 1520
Thr Tyr Ile Lys Met Glu Leu Leu Lys Lys Leu Asn Ile Leu Leu Pro 1525	1530	1535
Thr Leu Tyr Ile Lys Glu Ile Lys Asn Lys Ser Pro His Glu Ile Lys 1540	1545	1550
Leu Ser Ser Met Asn Ile Ile Asp Ile Phe Val Ser Leu Lys Asn Val 1555	1560	1565
Lys Ile Arg Asn Glu Asp Ile Met Tyr Lys Leu Ser Gln Lys Tyr Ile 1570	1575	1580
Met Asp Ile Phe Phe His Asn Asn Lys Val Lys Leu Glu Tyr Gln Ile 1585	1590	1595 1600
Lys Phe Leu Asn Ser Leu Thr Phe Leu Asp Tyr Ile Lys Glu Ala Asp 1605	1610	1615

Leu Leu Phe Lys Thr Phe Phe Phe Lys Lys Asn Lys Ile Asn Lys Ile
 1620 1625 1630
 Gln Lys Glu Glu Lys Lys Lys Gln Asn Asn Tyr Asn Leu Leu Tyr Thr
 1635 1640 1645
 His Phe Leu Lys Ile Pro Ile His Asn Cys Ile Tyr Ile Pro Asn Ile
 1650 1655 1660
 Ser Ser Tyr Ile Leu Asn Phe Ile Ser Ile Tyr Asp Tyr Phe Glu Lys
 1665 1670 1675 1680
 Lys Asp Gln Tyr Val Ile Tyr Lys Lys Leu Leu Tyr Phe Leu Asp Glu
 1685 1690 1695
 Tyr Leu Lys Ser His Asn Lys Ile Asn Ser Met Asn Ser Leu Asp Lys
 1700 1705 1710
 Arg Asn Ile Ile Leu Ile Ile Ile Leu Leu Tyr Ile Ser Ser Ser Pro
 1715 1720 1725
 Leu Asn Ile Leu Ser Ile Arg Leu Gln Thr Leu Arg Ile Phe Tyr Tyr
 1730 1735 1740
 Tyr Ile Ile Gln Ser Asn Tyr Phe Ser Lys His Asn Ile Thr Tyr Ser
 1745 1750 1755 1760
 Ser Ser Thr His Ala Asp Ile Ser Lys Phe Val Val Ser Cys Ile Arg
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 35 40 45
 Leu Ile Asn Ser Cys Asp Ser Asn Lys Ser Asn Tyr Ser Cys Cys Tyr
 50 55 60
 Leu Asn Asn Glu Cys Phe Val Lys Asn Ile Ser Ile Cys Lys Lys Cys
 65 70 75 80
 Met Phe Ser Tyr Phe Glu Phe Lys Asn Val Thr Lys Val Ile Tyr Met
 85 90 95
 Arg His Gly Ala Arg Thr Pro Lys Lys Lys Ile Lys Asn Ile Trp Pro
 100 105 110
 Phe Lys Glu Gly Lys Gly Asp Leu Thr Phe Leu Gly Phe Gln Gln Ser
 115 120 125
 Ile Lys Val Gly Glu Tyr Leu Arg Lys Tyr Tyr Tyr Thr Phe Asn Lys
 130 135 140

Leu Asn Lys Lys Tyr Asn Lys Arg Glu Arg Gly Leu Arg Ile Asn Asn
 145 150 155 160
 Lys Glu Lys Gly Tyr Ile Lys Lys Asn Lys Cys Asp Val Lys Lys Cys
 165 170 175
 Lys Thr Leu Tyr Lys Asn Lys Tyr Asn Asn Asn Asn Asn Asn Asn
 180 185 190
 Asn Asn Tyr Val Ile Asn Glu Lys Tyr Asn Gly Ser Asn Lys Asn Asp
 195 200 205
 Tyr Val Lys Asn Asn Thr Tyr Asp Asn Lys Gly Tyr Ser Tyr Leu Tyr
 210 215 220
 Asp Leu Ser Thr Ser Phe Asn Glu Leu Glu Asn Arg Lys Arg Lys Leu
 225 230 235 240
 His Lys Phe Pro Tyr Leu Arg Asp Phe Ile Tyr Tyr Glu Lys Tyr Phe
 245 250 255
 Leu Lys Ile Asn Lys Arg Ser Asn Lys His Gln Arg Lys Val Phe Ile
 260 265 270
 Lys Ile Lys Arg Arg Arg Arg Asn Asn Ile Leu Lys Ile Trp Ile His
 275 280 285
 Gln His Leu Ile Asn Lys Met Lys Lys Ile Lys Asn Lys Asn Met Asn
 290 295 300
 Asn Tyr Asn Lys Cys Tyr Ile Lys Phe Ser Ser Ile Arg Lys Arg Gly
 305 310 315 320
 Tyr His Lys Met Glu Asn Ile Glu Cys Asn Asn Lys Asn Asn Asp Asp
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 Tyr Tyr Tyr Tyr Asn Tyr Asn Asn Asp Glu Thr Pro Phe Asn Asn Lys
 385 390 395 400
 Ser Phe Asn Tyr Ala Asp Met Leu Lys Tyr Thr Lys Tyr Tyr Tyr Lys
 405 410 415
 Asn Ile Leu Lys Asp Lys Lys Asn Ile Tyr Thr Asn Asn Lys Lys Lys
 420 425 430
 Glu Leu Phe Phe Pro Leu Met Glu His Leu Tyr Met Tyr Lys Lys Lys
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 Leu Leu Ile Asn Lys Met Lys Glu Lys Asn Ile Lys Lys Lys Lys Lys
 450 455 460
 Lys Tyr Asp Lys Ile Ile Lys Leu Ile Asn Lys Tyr Leu Cys Ile Lys
 465 470 475 480
 Thr Thr Asn Ser Glu Arg Cys Lys Leu Thr Ala Tyr Gly Ile Ile Cys
 485 490 495
 Gly Ile Leu Gly Ile Ser Glu Tyr Ile Tyr Phe Phe Phe Phe Ile Leu
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Phe Phe Lys Ser Asn Tyr Asp Lys Thr Asn Asp Asn Asn Ile Asp Thr
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 Tyr Thr Lys Arg Lys Glu Lys Lys Lys Cys Leu Asn Lys Arg Ser Lys
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 Cys Phe Gln Asn Trp Ile Leu Asn Arg Asp Ile Thr Ser Gly Gln Tyr
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 Asn Cys Ile Asp Lys Asn Thr Ala Pro Val Lys Asn Tyr Ile Ile Gly
 565 570 575
 Glu Asn Leu Cys Gly Glu Asn Gly Cys Gly Lys Asn Gly Cys Gly Asp
 580 585 590
 Ile Leu Arg Gly Asp Ile Leu Cys Gly Asp Ile Leu Arg Gly Asp Asn
 595 600 605
 Asn Ser Ile Pro Leu Phe Arg Ser Asn Arg Ile Phe Cys Lys Gln Ser
 610 615 620
 Lys Ile Thr Phe Cys Asp Glu Leu Tyr Ile Tyr Phe Asn Lys Ile Leu
 625 630 635
 Lys Arg Leu Gln Ser Leu Asp Asp Met Tyr Lys Ile Asn His Glu Val
 645 650 655
 Lys Met Phe Gly Asn Asp Lys Asp Val Leu Asn Asn Ser Tyr Lys Lys
 660 665 670
 Cys Tyr Asp Lys Asn Asp Tyr Gly Ser Tyr Pro Ser Tyr Asn Lys Tyr
 675 680 685
 Ser Asn Asp Tyr Lys Ser His Tyr Val Ile Lys Lys Met Lys Asn Val
 690 695 700
 Lys Ser Val Gln Cys Ser Asn Glu Ser Ile Ile Leu Lys Glu Arg Gln
 705 710 715
 Glu Asn Glu Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Met Glu Asn Thr
 725 730 735
 Phe Ile Asn Asn Asn Asn Leu Met Tyr Asn Ile Asn Val Phe Phe Asp
 740 745 750
 Leu Ile Ile Asn Glu Arg Gly Asn Phe Gln Phe Phe Tyr Asn Asn Ile
 755 760 765
 Lys Lys Lys Arg Gln Lys Asn Glu Lys Gly Leu Glu Glu Trp Asn Val
 770 775 780
 Tyr Asn Ile Phe Gln Leu Tyr Met Lys Tyr Ile Leu Asn Glu Phe Ser
 785 790 795 800
 Lys Phe Phe Lys Leu Phe Lys Phe Leu Asn Lys Asn Val Glu Asn Ile
 805 810 815
 Asp Asn Thr Phe Asn Ser Ile Thr Asn Ile Tyr Asn Lys Tyr Tyr Ile
 820 825 830
 Asn Met Val Val His Arg Lys Asp Cys Phe Glu Lys Lys Gln Ile His
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 Ser Lys Glu His Met Met Lys Lys Ile His Leu Arg Asp Lys Phe Ile
 850 855 860
 Glu Tyr Glu Lys Glu Asn Glu Ile Ile Asp Asn Cys Asn Asn Ile Asn
 865 870 875 880
 Met Asp Asn Lys Lys Lys Glu Ile Asn Asn Asn Tyr Asn Asn Met Ile

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Asp	Asn	Asn	Asn	Ile	Glu	Ile	Asp	Met	Ser	Asn	Asn	Phe	Ile	Phe	Thr	
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Phe	Leu	Phe	Tyr	Tyr	Leu	Lys	Asn	Thr	Tyr	Ile	Leu	Phe	Ser	Val	Val	
	930					935					940					
Lys	Val	Ala	Glu	Arg	Asn	Ser	Leu	Met	Leu	Lys	Thr	Leu	Lys	Thr	Lys	
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Asn	His	Tyr	Ile	Lys	Lys	Leu	Arg	Asn	His	Ile	Ile	His	Asn	Ser	Asp	
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Val	Tyr	Lys	Ile	Leu	Asn	Asn	Tyr	Tyr	Lys	Asp	Glu	Ile	Phe	Ile	Val	
			980					985					990			
Tyr	Asp	Ile	Thr	Lys	Trp	Thr	Glu	Asn	Cys	Met	Asn	Thr	Thr	Asp	Ile	
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Leu	Tyr	Asn	Asp	Val	Lys	Lys	Asn	Thr	Lys	Ile	Asp	Asp	Leu	Glu	Asn	
	1010					1015					1020					
Ile	Asp	Ile	Pro	Ile	Ile	Thr	Asn	Asp	Lys	Glu	Glu	Tyr	His	Val	Asn	
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Leu	Lys	Lys	Lys	Leu	Lys	Asn	Ser	Ile	Ile	Leu	Lys	Asp	Leu	Lys	Lys	
			1060					1065					1070			
Leu	Asn	Cys	Asn	Phe	Ile	Asn	Lys	Asn	Tyr	Ile	His	Asn	Thr	Asn	Tyr	
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	1090					1095					1100					
His	Pro	Phe	His	Asn	Lys	Lys	Lys	Asn	Val	Lys	Ile	Ile	Lys	Lys	Phe	
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				1125					1130					1135		
Asn	Phe	Asn	Arg	Ala	Tyr	Glu	Lys	Leu	Ser	Gln	His	Pro	Pro	Ser	Ser	
			1140					1145					1150			
Ile	Asp	Leu	Ile	Lys	Lys	Glu	Tyr	Gly	Gln	Asn	Asn	Tyr	Ile	Ile	Asn	
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Gly	Glu	Ile	Lys	Lys	Tyr	Glu	Glu	Gln	Asn	Asn	Phe	Ile	Ile	Lys	Arg	
	1170					1175					1180					
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Asp	Ala	Asp	Glu	Arg	Asp	Arg	Leu	Lys	Arg	Asn	Lys	Asn	Ile	Gln	Asn	
</																

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 Lys Asn Asp Gln Thr Asn Glu Gln Lys Asn Asp Gln Thr Asn Asp Gln
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 Thr Asn Asp Lys Ile Lys Arg Phe Tyr Lys Asn Ile Tyr Thr Cys Tyr
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 Lys Leu Met Cys Lys Asn Glu Tyr Ser Asn Lys Tyr Leu Ser Trp Leu
 1330 1335 1340
 Cys Ser Gly Met Ser Leu Ile Asp Val Val Ile Asn Phe Ile Ile Asn
 1345 1350 1355 1360
 Val Arg Leu Tyr Glu Lys Tyr Asn Lys Glu Asn Lys Thr Thr Lys Cys
 1365 1370 1375
 Phe Ile Pro Arg Ile Ile Leu Tyr Leu Thr His Gln Ser Ser Ile Leu
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 Ser Phe Gln Ser Cys Val Gly Ile Arg Lys Lys Asp Met Lys Ile Pro
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 1490 1495 1500
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 Lys Arg Asn Ile Asn Glu Asn Ile Asp Lys Lys Lys Ser Ile Asn Ile
 1540 1545 1550
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 Tyr Glu Ser Tyr Leu Pro Lys Cys Leu Asn Lys Ile His Asp Phe Lys
 1570 1575 1580
 Asn Leu Phe Tyr Leu Leu Cys Tyr Lys Asn Asn Asn Ile Gln Asp Leu
 1585 1590 1595 1600
 Ile Gln Leu Tyr Asp Ile Cys Leu Asn Asn Tyr Thr His Ile Lys
 1605 1610 1615
 Lys Asn Met Gln Leu Lys Glu Gly Lys Lys His Gly Lys Arg Asn Phe
 1620 1625 1630

Tyr Gly Tyr Phe Val Lys Phe Thr Phe Asn Asn Ser Val Pro Leu Lys
 1635 1640 1645
 Leu Lys Lys Asn Lys Leu Ile Lys Lys Tyr Asn Met Gly Asn Lys Lys
 1650 1655 1660
 Asp Lys Glu Glu Asp Asn Tyr His Asn Asp Lys Asn Asn Tyr Ser
 1665 1670 1675 1680
 Asp Asn Ile Phe Tyr Asp Asn His Asp Thr Asn Asn Asn Asn Asn Asn
 1685 1690 1695
 Asn Asn Asn Asn Asn Asn Asn Ser Asn Asn Asn Asn Asn Asn Ile
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 Asn Lys Arg Glu Ser Leu Lys Lys Lys Lys Lys Lys Lys Lys Lys Asn
 1730 1735 1740
 Cys Ile Gln Lys Asn Asn Asn Ile Cys Glu Arg Lys Lys Ser Asn Ile
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 Met Lys Asp Ile Ala Lys Ile Asn Thr Asn Lys Lys Cys Asp Glu Asn
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 Ser Ile Ser Cys Ile Asn Asn Met Arg Glu Lys Arg Asn Ile Phe Lys
 1795 1800 1805
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 Tyr Met Asn Tyr Ile Tyr Asn Ser Thr Asn Val Thr Tyr Gly Lys Asn
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 Tyr Lys Arg Ile Asn Lys Lys Asp Val His Ile Asn Asn Ile Leu Leu
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 His Thr Tyr Lys Gln His Lys Lys Lys Lys Ser Thr Ile Ile Ser Ser
 1860 1865 1870
 Asp Asn Asn Asn Asn Asn Asn Asn Asn Ala Glu Asp Asp Ile Ser Ser
 1875 1880 1885
 Arg Lys Leu Lys Phe Lys Asp Ile Lys Gly Asn Thr Lys Gln Lys Tyr
 1890 1895 1900
 Ile Asn Asp His Asn Asn Ile Asn Ser Tyr Asp Asn Asn Ile Asn Asn
 1905 1910 1915 1920
 Gly Leu Ile Asn Glu His Lys Asn Val Leu His Asn Glu Cys Lys Asn
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 Lys Asn Asn Gln Ile Ile Gly Tyr Ser Ile Lys Tyr Asp Lys Asn Val
 1940 1945 1950
 Val Ser Glu Asn Ser Cys Ser Asp Val Ile Thr Ser Leu Lys Asp Lys
 1955 1960 1965
 Lys Ile Lys Lys Arg Lys Lys Lys Leu Gln Lys Lys Asn Tyr Glu Asn
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2005

2010

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 <213> Plasmodium falciparum

<400> 76
 Met Phe Val Val Leu Ser Tyr Val Tyr Gly Val Ser Leu Gln Ile Leu
 1 5 10 15
 Lys Lys Lys Arg Ser Asn Gln Val Asn Phe Leu Asn Arg Lys Asn Asp
 20 25 30
 Tyr Asn Leu Ile Lys Asn Lys Asn Pro Ser Ser Ser Leu Lys Ser Thr
 35 40 45
 Phe Asp Asp Ile Lys Lys Ile Ile Ser Lys Gln Leu Ser Val Glu Glu
 50 55 60
 Asp Lys Ile Gln Met Asn Ser Asn Phe Thr Lys Asp Leu Gly Ala Asp
 65 70 75 80
 Ser Leu Asp Leu Val Glu Leu Ile Met Ala Leu Glu Glu Lys Phe Asn
 85 90 95
 Val Thr Ile Ser Asp Gln Asp Ala Leu Lys Ile Asn Thr Val Gln Asp
 100 105 110
 Ala Ile Asp Tyr Ile Glu Lys Asn Asn Lys Gln
 115 120

<210> 77
 <211> 498
 <212> PRT
 <213> Plasmodium falciparum

<400> 77
 Met Ile Phe Gln His Phe Leu Ser Leu His Asn Glu Lys Lys Ile Ser
 1 5 10 15
 Met Phe Phe Tyr Thr Phe Leu Ile Leu Tyr Ile Ser His Val Arg Ile
 20 25 30
 Phe Tyr Asp Cys Leu Asn Leu Lys Asn Glu Lys Asn Tyr Asn Val Leu
 35 40 45
 Leu Lys Asn Gly Asn Asn Asn Ser Pro Ser Tyr Tyr Phe Leu Asn Ser
 50 55 60
 Asn Tyr Arg Asn Asn Asn Asn Phe Leu Arg Arg Lys Glu Asn Tyr Gln
 65 70 75 80
 Arg Val Leu Leu Leu Tyr Asn Pro Lys Phe Asn Asp Gly Ala Lys Arg
 85 90 95
 Asn Ser Tyr Ile Leu Tyr Ala His Ser Lys Lys Asn Lys Asn Lys Asn
 100 105 110
 Lys Ile Asn His Asn Ile Asn Ile Thr Lys Arg Glu Thr Val Ser Arg
 115 120 125
 Arg Asp Arg Asp Asp Glu Asp Asp Asn Tyr Asp Asp Asp Asp Glu Asn
 130 135 140
 Tyr Asp Asp Asp Asp Asp Asn Tyr Asp Asp Asp Glu Asn Tyr Glu Asp
 145 150 155 160

Asp Glu Asn Tyr Asp Asp Asp Asp Glu Asn Tyr Asp Asp Gly Glu Asn
 165 170 175
 Tyr Glu Asp Asp Glu Asn Tyr Asn Asp Asp Glu Asn Tyr Asp Asp Asp
 180 185 190
 Glu Asn Tyr Asp Asp Glu Tyr Asp Asp Asp Asp Tyr Pro Phe Asn Asn
 195 200 205
 Asp Asp Ile Asp Ile Gly Asp Lys Asp Thr Pro Tyr Glu Thr Gln Lys
 210 215 220
 Ser Lys Ile Arg Ser Lys Asp Glu Asn Val Ala His Gln Asn Lys Gly
 225 230 235 240
 Gly Asn Thr Leu Ser Leu Glu Asn Tyr Lys Ile Lys Lys Asn Ala Asn
 245 250 255
 Ser Asp Leu Glu Thr Asp Lys Lys Asn Lys Val Lys Lys Lys Gln Asp
 260 265 270
 Glu Glu Met Asp Glu Thr Asn Lys Asn Asn Lys Asn Glu Thr Asn Glu
 275 280 285
 Lys Asp Glu Lys Asp Glu Lys Glu Glu Lys Asp Asp Asn Ile Asn Asp
 290 295 300
 Asn Asn Asp Asp Ile Met Glu Asp Glu Tyr Glu Glu Asp Tyr Ile Thr
 305 310 315 320
 Glu Glu His Ile Lys Asp Leu His Lys Ile Cys Ser Glu Lys Met Asn
 325 330 335
 Lys Val Tyr Glu Phe Leu Lys Lys Glu Ser Tyr Arg Phe Asn Leu Asn
 340 345 350
 Asn Val Ser Asn Asp Met Phe Glu Asn Glu Lys Val Lys Ile Asn Glu
 355 360 365
 Arg Ile Tyr Thr Val Lys His Ile Cys His Ile Lys Lys Lys Glu Asn
 370 375 380
 Leu Phe Thr Ile Thr Pro Tyr Asp Pro Tyr Phe Val Asn Phe Leu Tyr
 385 390 395 400
 Gln His Phe Ile Lys Glu Phe Asp Glu Leu Lys Phe Tyr Val Lys Asp
 405 410 415
 Lys Ser Leu Tyr Ala Ile Ile Pro Pro Ile Ser Glu Asn Leu Lys Asn
 420 425 430
 Glu Ile Lys Met Lys Ile Lys Arg Lys Ile Glu Asp Ser Lys Val Thr
 435 440 445
 Leu Arg Thr Val Arg Lys Gln Met Met Asp Lys Leu Glu Lys Phe Lys
 450 455 460
 Asn Lys Ile Gly Lys Asp Ile Tyr Phe Lys Gln Lys Asn Tyr Ile Gln
 465 470 475 480
 Ser Ile His Asp Gln Thr Lys Lys Asn Ile Glu Lys Leu Phe Ala Asp
 485 490 495

Thr Lys

<210> 78
 <211> 235
 <212> PRT

<213> Plasmodium falciparum

<400> 78

Met Lys Gly Lys Gly Ser Phe Phe Phe Cys Trp Ile Phe Leu Ile Ser
 1 5 10 15
 Phe Leu Tyr Leu Ile Asn Val Ile Val Cys Lys Gln Thr Ile Leu Lys
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 Leu Ser Tyr Gln Ile Asn Ser Phe Asn Ser Asp Ala Lys Lys Lys Glu
 35 40 45
 Trp Thr Asn Ile Gly Ser Phe Ile Leu Asn Ser Ile Lys Ile Tyr Asp
 50 55 60
 Ile Ser Asn Thr Tyr Val Glu Glu Lys Arg Lys Phe Leu Glu Lys Met
 65 70 75 80
 Lys Asn Val Glu Leu His Phe Asp Tyr Val Leu Phe Gln Leu Cys Tyr
 85 90 95
 Asp Glu Ser Lys Cys Leu Glu Thr Tyr Val Asn Lys Glu Asn Ile Lys
 100 105 110
 Asn Ile Asn Asn Phe Val Phe Leu Leu Gly Leu Asp Asn Asn Tyr Thr
 115 120 125
 Pro Phe Ile Leu Asn Tyr Lys Ile Tyr Asn His Glu Glu Leu Tyr Asn
 130 135 140
 Gln Lys Ile Asn Lys Tyr Asn Asn Glu Ile Ile Tyr Ser Asn Leu Phe
 145 150 155 160
 Ile Ile Lys Phe Pro Thr Val Ser Thr Pro Ile Asn Ile Asn Asn Ile
 165 170 175
 Thr Thr Glu Asp Ile His Met Lys Pro Lys Thr Gln Lys Asn Glu Lys
 180 185 190
 Ile Asn Asp Gln Asn Gln Pro Lys Ser Phe Leu Arg Lys Tyr Trp Phe
 195 200 205
 Ile Ile Leu Ile Phe Phe Leu Ser Phe Ser Phe Ser Lys His Leu Thr
 210 215 220
 Glu Asn Glu Pro Gln Pro Pro Asp Asn Thr Ser
 225 230 235

<210> 79

<211> 2496

<212> PRT

<213> Plasmodium falciparum

<400> 79

Met Asp Lys Lys Arg Thr Phe Tyr Tyr Leu Phe Phe Phe Phe Thr Phe
 1 5 10 15
 Leu Val Tyr Val Leu Tyr Phe Asp Asn Ile Lys Ser Val Leu Arg Ser
 20 25 30
 Ser Thr Lys Lys Lys Lys Lys Lys Lys Ile Cys Lys Ser Thr Phe Tyr
 35 40 45
 Val His Glu Glu Ser Glu Glu Ile Lys Ser Trp Leu Arg Asn Ser Asn
 50 55 60
 Glu Arg Asp Lys Gly Lys Lys Phe Phe Ile Phe Glu Arg Leu Ile Lys
 65 70 75 80

Glu Arg Lys Tyr Ile Cys Val Asn Lys Tyr Lys Arg Asn Asn Lys Leu
 85 90 95
 Lys Trp Ile Tyr Lys Asn Thr Tyr Glu Lys Thr Lys Asn Ile Cys Asp
 100 105 110
 Asp Tyr Asn Ile Leu Phe Lys Cys Ile Lys Gly Ile Ile Tyr Asp Lys
 115 120 125
 Asn Lys Glu Thr Phe Phe Glu Thr Phe Phe Glu Asn Phe Trp Asp Asn
 130 135 140
 Ile Phe Tyr Met Asn Lys Tyr Ile Phe Asn Ile Tyr Tyr Tyr Met Phe
 145 150 155 160
 Asp Tyr Thr Lys Lys Val Lys Lys Lys Ile Glu Gly Ile Lys Glu Asn
 165 170 175
 Met Asn Ile Arg His Asn Asn Asn Tyr Asn Asn Ile Phe Tyr Val His
 180 185 190
 Lys Phe Phe Leu Phe Asn Asp Asp Glu Glu Lys Lys Lys Arg Asn Asp
 195 200 205
 Asp Ile Lys Ile Asn Ile Lys Leu His Asn Asn Thr Arg Lys Leu Ser
 210 215 220
 Val Ser Glu Glu Asn Val Glu Leu Lys Pro Tyr Ile Lys Gln Gly Glu
 225 230 235 240
 Arg Asn Glu Thr Val Val Asn Leu Tyr Glu Tyr Phe Thr Gly Gly Val
 245 250 255
 Lys Arg Ser Asn Asn Asn Asn Glu Ile Val Val Thr Ser Thr Glu Gln
 260 265 270
 Phe His Arg Ile Val Ile Ile Cys Phe Lys Pro Thr Val Lys His Ser
 275 280 285
 His Ile Ile Thr Ser Pro His Asp Ala Leu Asn His Ile Val Glu Glu
 290 295 300
 Asn Asp Lys Ile Lys Leu Ser Glu Glu Ile Tyr Ser Ile Pro Phe Tyr
 305 310 315 320
 Pro Ile Tyr Gly Asn Leu Gly Leu Lys Asn Val Ile Thr Thr Gly Ile
 325 330 335
 Val Glu Phe Met Ile Pro Tyr Phe Ser Arg Thr Gln Met Asn Phe Thr
 340 345 350
 Val Thr Cys Ala Asn Gly Glu Met Asn Asp Leu Tyr Lys Phe Glu Asp
 355 360 365
 Leu Ile Lys Ile Arg Ile Arg Ile Pro Arg Asn Thr Lys Lys Ile Leu
 370 375 380
 Gly Leu Ser Thr Asn Glu Lys Asp Lys Thr Val Phe Glu Arg Ile Val
 385 390 395 400
 Asp Asn Thr Ser Asn Glu Tyr Arg Phe Lys Ser Tyr Asn Asn Lys Ile
 405 410 415
 Val Gly Ile Lys Leu Glu Asn Ser Ile Leu Asp Pro Pro Gly Cys Phe
 420 425 430
 Lys Thr Val Tyr Glu Asp Asp Lys Ile Leu Gln Leu Glu Val Phe Leu
 435 440 445
 Gln Tyr Val Lys Cys Ile Asn Leu Asp Arg Asp Asn Tyr Lys Ile Arg

450					455					460					
Phe 465	Phe	Phe	Leu	Pro	Glu 470	Asp	Phe	Gly	Asp	Glu 475	Glu	Ile	Glu	Phe	Ser 480
Cys	Lys	Phe	Thr	Tyr 485	Lys	Lys	Lys	Thr	Ser 490	Lys	Ile	Ile	Phe	Gly	Leu 495
Gly	Glu	Thr	Ser 500	Val	Asp	Lys	Asp	Ile 505	Phe	Tyr	Leu	Glu	Asp 510	Glu	His
Val	Lys	Leu 515	Asn	Ile	Asn	Gln	Asp 520	Ile	Ser	Gly	Asp	Glu 525	Pro	Tyr	Tyr
Ser	His 530	Leu	Asn	Tyr	Asn	Gly 535	Ile	Pro	Tyr	Asn	Ile 540	Cys	Asn	Phe	Gln
Tyr 545	Lys	Ser	Glu	Tyr	Asp 550	Ser	Gln	Val	Cys	Glu 555	Arg	Thr	Ile	His	Glu 560
Phe	Ser	Leu	Phe	Ile 565	Tyr	Asn	Cys	Asp	Thr 570	Leu	Val	Gly	Thr	Gln	Ile 575
Gln	Thr	Thr	Glu 580	Pro	Ile	Thr	Ser	Val 585	Lys	Tyr	Leu	Asn	Ser 590	Thr	Tyr
Pro	Ile	Asn 595	Lys	Phe	Ser	Asp	Ile 600	Thr	Leu	Leu	Ser	Lys 605	Asp	Ile	Asp
Ile	Glu 610	Gly	Leu	Glu	Glu	Ala 615	Phe	Arg	Asn	Ser	Lys 620	Phe	Phe	Leu	Thr
Ser 625	Tyr	Ile	Asn	His	Gly 630	Pro	Phe	Pro	Leu	Ile 635	Ile	Glu	Cys	Val	Ile 640
Ser	Asn	Ser	Asn	Lys 645	Asp	Tyr	Gln	Asn	Val 650	Tyr	Ile	Leu	Leu	His 655	Leu
Arg	Thr	Ser	Ile 660	Lys	Asn	Arg	Ser	Val 665	Ser	Phe	Cys	Asp	Phe 670	Glu	Lys
Val	Gln	Gly 675	Tyr	Asn	Tyr	Leu	Asn 680	Asn	Tyr	Ile	Asp	Gly 685	Lys	Ile	Cys
Asn 690	Ile	Asn	Ile	Thr	Ser	Asn 695	Ser	Val	Phe	Gly	Phe 700	Arg	Cys	Pro	Ser
Asn 705	Ser	Ile	Lys	Glu	Pro 710	Lys	Asp	Cys	Phe	Ser 715	Gln	Val	Tyr	Ile	Asp 720
Lys	Lys	Val	Tyr	Lys 725	Leu	Asn	Asp	Lys	Leu 730	Ser	Asn	Lys	Leu	Ile 735	Leu
Tyr	Ser	Met	Lys 740	Gln	Glu	Asn	Leu	Ala 745	Ile	Ala	Gly	Phe 750	Asn	Asn	Tyr
Ile	Ser	Asn 755	Ser	Phe	Ser	Phe	Glu 760	Cys	Tyr	Cys	Ile	Asp 765	Lys	Asn	Gln
Thr 770	Tyr	Ser	Ser	Tyr	Glu	Arg 775	Thr	Ser	Gly	Glu	Asp 780	Ile	Phe	Asn	His
Ile 785	Val	Lys	Arg	Ile	His 790	Val	His	Tyr	Lys	Asn 795	Tyr	Asp	Glu	Leu	Tyr 800
Asp	Tyr	Asn	Ile	His 805	Asp	Lys	Ile	Thr	Tyr 810	Glu	Pro	Ile	Met	Lys 815	Asn
Pro	Pro	Ile	Thr 820	Tyr	Leu	Cys	Asp	Phe 825	Leu	Asn	Lys	Lys	Gln 830	Ile	Leu

Gln Pro Leu Asn Asn Lys Thr Lys Asn Tyr Ile Cys Thr Ile Trp Tyr
 835 840 845
 Pro Lys Pro Leu Asn Tyr Ile Ala Leu Asn Cys Pro Thr Asn Arg Arg
 850 855 860
 Asp Glu Gln Asn Asp Gln Thr Ile Ser Glu Val Tyr Asn Ser Leu Gln
 865 870 875 880
 Lys Asp Leu Leu Lys Pro Thr Gly Ile Glu Gln Gln Ile Asp Gln Lys
 885 890 895
 Lys Lys Glu Leu Asn Leu Leu Phe Asn Lys Arg Asn Ile Tyr Ser Asn
 900 905 910
 Leu Tyr His Leu Pro Lys Asn Ala Pro Lys Arg Thr Ile Asn Lys Asn
 915 920 925
 Gly Leu Asn Ile Val Asn Ile Asp Glu Ile Ile Pro Gly Ile Leu Ile
 930 935 940
 Lys Asp Val Ile Asn Met Lys Leu Glu Asp Val Ile Lys Pro Asp Leu
 945 950 955 960
 Leu Thr Pro Thr Ser Phe Leu His Lys Thr Tyr Asn Thr Asn Lys Ser
 965 970 975
 Tyr Leu Phe Ser Thr Arg Asn Lys Ser Thr Ser Val Phe Asn Thr Pro
 980 985 990
 Ser Ile Tyr Thr Pro Leu Thr His Thr Ser Phe Ser Ile Ser Pro Lys
 995 1000 1005
 Ser Val Pro Leu Thr Lys Ser Arg Ile Glu Glu Thr His Ser Ser Ser
 1010 1015 1020
 Asn Thr Tyr Glu Gln Tyr Ile Gly Lys Arg Asn Ser Ile Glu Asn Gly
 1025 1030 1035 1040
 Phe Phe Ile Phe Gln Leu Pro Pro Tyr Leu Lys Lys Asn Gln Thr Ile
 1045 1050 1055
 Glu Phe Ala Cys Ile Asn Asp Ser Thr Ile Lys Asn Lys Asn Val Gly
 1060 1065 1070
 Asn Asn Gly Ile Met Thr Ile His Leu Lys Ser Phe Gly Asn Pro Ile
 1075 1080 1085
 Glu Gly Cys Tyr Phe Tyr Lys Asn Ser Ala Lys Tyr Asn Tyr Leu Lys
 1090 1095 1100
 Lys Ser Ile Lys Ile Asp Asp Leu Lys Lys Glu Glu Cys Thr Ile Arg
 1105 1110 1115 1120
 Ser Asp Gly Glu Ile Glu Phe Val Gly Ile Met Cys Pro Tyr Glu Asn
 1125 1130 1135
 Asn Leu Tyr Leu Thr Pro Ser Ser Cys Phe Leu Lys Thr Tyr Asp Asn
 1140 1145 1150
 Thr Asp Asn Leu Val Glu Leu Leu Asp Ile Asn Glu Asn Phe Glu Tyr
 1155 1160 1165
 Tyr Ser Asn Asp Lys Gly Ile Ser Tyr Leu Lys Ile Pro Gln Glu Phe
 1170 1175 1180
 Leu Asn His Val His Leu Phe Cys Tyr Cys Asn Val Asp Lys Asp Ser
 1185 1190 1195 1200

Val Ser Asp Thr Asn Val Leu Val Lys Lys Glu Asn Lys Ile Ser Phe
 1205 1210 1215
 Glu Leu Asn Tyr Ser Asn Lys Gly Phe Asn Ile Ile Lys Thr Ile Asp
 1220 1225 1230
 Tyr Gln Tyr Glu Ala Asp Ile Leu Ile Gly Tyr Ser Tyr Tyr Phe Lys
 1235 1240 1245
 Arg Val Thr Pro Ile Tyr Arg Lys Lys His Ile Cys Asp Phe Thr Thr
 1250 1255 1260
 Glu Asp Asn Ser Leu Glu Pro Glu Ser Glu Asp Lys Met Ile Tyr Ser
 1265 1270 1275 1280
 Cys Tyr Leu Ser Leu Glu Asn Asn Leu Asn Phe Ile Glu Val Lys Cys
 1285 1290 1295
 Pro Lys Asn Lys Lys Ser Ser Asn Ser Glu Trp Leu Phe Lys Tyr Gly
 1300 1305 1310
 Thr Phe Asp Lys Ser Ser Glu Ile Met Glu Asp Asp Glu Asn Ile Lys
 1315 1320 1325
 Lys Tyr Glu His Met Lys Tyr Met Pro Glu Asp Lys Asp Glu Ile Ile
 1330 1335 1340
 Tyr Leu Phe Lys Lys Gln Lys Leu Glu Asp Ile Leu Pro Gly Val Ile
 1345 1350 1355 1360
 Ile Phe Asp Lys Asn Arg Tyr Phe Phe Glu Lys Gly Asn Phe Ser Phe
 1365 1370 1375
 Val Thr Pro Leu Ile Val Lys Glu Asp Val Thr Ile Lys Leu Leu Cys
 1380 1385 1390
 Asp Asn Ser Glu Thr Lys Ile Asp Asp Lys Ile Gly Lys Lys Gly Ile
 1395 1400 1405
 Ile Leu Ile Lys Ile Pro Gln His Ile Thr Asp Lys Lys Phe Tyr Gly
 1410 1415 1420
 Cys Asp Phe Ser Gly Asp Ser Asn Lys Lys Ser Ser Phe Tyr Tyr Thr
 1425 1430 1435 1440
 Ser Val Tyr Asp Leu Lys Thr Gln Asn Gln Tyr Cys Glu Val Lys Leu
 1445 1450 1455
 Lys Glu Asn Ile Ile Ile Ser Leu Asn Cys Pro Asn Gly Asn Ile Asn
 1460 1465 1470
 Pro Asn Asn Cys Phe Asn Asn Val Phe Leu Lys Thr Asn Met Asn Glu
 1475 1480 1485
 Gln Ile His Glu Lys Ile Gln Asn Ile Phe Asp Gln Val Lys Val Ile
 1490 1495 1500
 Asn Thr Lys Ser His Val Leu Leu Asn Ser Ser Ser Thr Phe Leu Ile
 1505 1510 1515 1520
 Ile Ser Lys Ile Thr Lys Lys Glu Leu Asn Phe Phe Cys Thr Cys His
 1525 1530 1535
 His Asn Glu Thr Lys Asn Val Gly Thr Ile Tyr Ile Lys Asn Glu Asp
 1540 1545 1550
 Ile Ile Asn Phe Ser Lys Ala Tyr Asn Lys Glu Ser Ser Ile Leu Gln
 1555 1560 1565
 Tyr Ile Asp Val Thr Pro Tyr Tyr Leu Lys Asp Thr Tyr Ile Cys Asp

1570	1575	1580
Phe Thr Gln Asn His Tyr Ser Ile Ser Phe Asp Thr Ser Val Asn Val 1585 1590 1595 1600		
Gln Asn Val Leu Glu Arg Tyr Leu Lys Ile Leu Ser Asp Leu Tyr Asn 1605 1610 1615		
Thr His Glu Glu Phe Thr Tyr Phe Ser Ile His Leu Lys Leu Lys Lys 1620 1625 1630		
Glu Ile Met Lys Lys Lys Tyr Ile Asp Tyr Leu Lys Lys Lys Ile Asn 1635 1640 1645		
Glu Tyr Lys Glu Lys Glu Thr Ser Asp Lys Ile Lys Arg Val Thr Leu 1650 1655 1660		
Ser Thr Asn Asp Asn Ile Asn Thr Ile Leu Val Tyr Arg Cys Asn Ile 1665 1670 1675 1680		
Asp Leu Gly Ser Phe Asp Lys Phe Lys Ile Lys Cys Pro Ser Lys Leu 1685 1690 1695		
Asn Glu Glu Glu Val Glu Asn Asn Lys Leu Tyr Pro Asn Leu Ile Tyr 1700 1705 1710		
Ser Ser Asn Leu Gly Leu Asp Glu Thr Asp Met Leu Asn Gly Leu Thr 1715 1720 1725		
Lys Leu Leu Tyr Gly Ser Val Leu Ile Asn Lys Thr Glu Lys Asn Val 1730 1735 1740		
Ser Phe Phe Glu Lys Gly Glu Leu Glu Leu Ile Ile Ser Pro Tyr Thr 1745 1750 1755 1760		
Asp Ser Ser Lys Asn Ile Ile Phe Ser Cys Glu Asn Val Pro Arg Asn 1765 1770 1775		
Leu Ser Lys Gly Ile Ile Gly Ser Ala Ser Ile Phe Ile Lys Lys Asn 1780 1785 1790		
Asp Asn Lys Ile Leu Gly Cys Asp Phe Ile Asp Thr Pro Ser Thr Leu 1795 1800 1805		
Ser Ser Ala Ser Thr Leu Glu Ser Ser Tyr Gly Ser His Ala Ser Ser 1810 1815 1820		
Pro Leu Ser Ser Ser His His Val Leu His Asn Asp Asn Gln Gly His 1825 1830 1835 1840		
Asp Val His Met Ile Asn His Ile Asp Ile Ser Asn Lys Lys Asn Ser 1845 1850 1855		
Phe Glu Phe Glu Ile Glu Leu Ile Glu Gly Lys Asn Thr Tyr Cys Asn 1860 1865 1870		
Ile Glu Ala Ile Glu Asn Asp Ile Val Gly Phe Ser Cys Pro Tyr Asn 1875 1880 1885		
Phe Leu Thr Thr Pro Ser Asp Cys Phe Glu Ser Ile Gln Ile Glu Gly 1890 1895 1900		
Val Asp Lys Glu Leu Glu Thr His Lys Leu Glu Lys Leu Leu Lys Gly 1905 1910 1915 1920		
Val Lys Ile Leu Asn Asn Asp Ile Tyr Lys Tyr Asn Phe Thr Pro Ser 1925 1930 1935		
Tyr Ile Ile Leu Pro Lys Lys Ile Lys Lys Ser Leu Lys Ile Phe Cys 1940 1945 1950		

Arg Cys Asn Ser Val Lys Leu Ile Lys Thr Gly Ile Ile Gln Ile Asn
 1955 1960 1965
 Ile Val Gly Asp Asp Leu Asn Asn Trp Phe Lys Lys Glu Ile Thr His
 1970 1975 1980
 Asn Ile Phe Ala Tyr Gln Lys Met Asp Tyr Phe Tyr Asp Phe Ser Lys
 1985 1990 1995 2000
 Gly Pro Thr Asn Ile Ser Ser Glu Asn Val Leu Gly Ile Ser Thr Met
 2005 2010 2015
 Ser Leu Met Ser Ser Asn Lys Lys Val Ser Arg Lys Lys Asn His Lys
 2020 2025 2030
 Glu Glu Asn Arg Thr Gln Gln Asn Val Tyr Lys Glu Ile Glu Asn Asp
 2035 2040 2045
 His Lys Asn Ile Asn Glu Asn Val Asn Lys Tyr Asp Asn Leu Pro Val
 2050 2055 2060
 Thr Leu Leu Ser Ser Asp Glu Gly Asp Gly Tyr Gln Ala Asp Glu Asp
 2065 2070 2075 2080
 Ile Gly Gly Glu Asp Asp Ala Glu Asp Val Asp Gly Glu Gly Asp Asp
 2085 2090 2095
 Glu Asp Asp Asn Ile Leu Asn Pro Leu Arg Thr Lys Gln Val Tyr Asp
 2100 2105 2110
 Ile Ile Val Ala Ala Ser Glu Phe Ser Lys Ile Glu Val Val Cys Pro
 2115 2120 2125
 Leu Arg Asn Ser Ser Gln Phe Arg Gln Ser Lys Ile Ser Pro Glu Asn
 2130 2135 2140
 Phe Phe Glu Tyr Val Tyr Val Leu Glu Asp Lys Asn Asp Asp Lys Arg
 2145 2150 2155 2160
 Lys Arg Ser Ile Glu Glu Asn Glu Lys Leu Val Lys Ala Ile Leu Glu
 2165 2170 2175
 Gly Lys Lys Asn Ile Asp Gly His Ile Ile Asn Ile Glu Asp Ile Asn
 2180 2185 2190
 Asn Lys Lys Ser Ser Lys Asn Ala Ser Val Glu Tyr Asp Asp Met Gly
 2195 2200 2205
 Asn Lys Ile Phe Ile Ser Ile Ile Ser Glu Lys Pro Lys Ala Val Ile
 2210 2215 2220
 Gly Asp Asn Ile Ser Ser Ser Arg Ser Ser Val His Ile Ser Asn Asn
 2225 2230 2235 2240
 Ile Met Asn Ser Ser Phe Gln Ser Asn Ile His Pro Asp Pro Ile Thr
 2245 2250 2255
 Ser Asp Thr Thr Thr Ser Glu Tyr Glu Gln Tyr Asn Ser Tyr Phe Lys
 2260 2265 2270
 Asp Ile Leu Val Ile Lys Asn Ile Asn Glu Val Ile Ser Phe Ala Asn
 2275 2280 2285
 Ile Lys Ile Asp Ile Asn Glu Gln Thr Tyr Ser Ser Ser Leu His Ile
 2290 2295 2300
 Pro Pro Leu Ile Leu Lys Asp Ala Glu Phe Leu Ile Ser Cys Asp Asn
 2305 2310 2315 2320

Ser Leu Thr Leu Asn Glu Asn Thr Arg Gly Lys Thr Ala Thr Val Lys
 2325 2330 2335

Ile Lys Val Lys Ser Asn Phe Leu Lys Ile Tyr Gly Cys Asp Phe Val
 2340 2345 2350

Gly Glu Phe Ser Thr His Phe Leu Phe Ser Lys Lys Trp Asp Asp Ile
 2355 2360 2365

Pro Lys Asn Tyr Ile Cys Lys Ile Asn Ile Gln Asp Asp Met Leu Ile
 2370 2375 2380

Gly Leu Ala Cys Pro Ser Phe Thr Lys Leu His Pro Pro Asp Cys Phe
 2385 2390 2395 2400

Glu Asn Ile Ile Val Asn Gln Asn Val Tyr Lys Lys Asn Ile Ile Met
 2405 2410 2415

Glu Thr Lys Asn Met Phe Phe Tyr Lys Gln Asn Asp Lys Pro Ile Leu
 2420 2425 2430

Ser Phe Val His Val Lys Lys Ile Leu Val Glu Thr Phe Leu Cys Lys
 2435 2440 2445

Cys Tyr Gln Val Thr Lys Ala Asp Tyr Lys Glu Val Thr Ile Gln Ile
 2450 2455 2460

Leu Tyr Glu Pro Tyr Val Met Gly Thr Pro Lys Tyr Thr Leu Glu Lys
 2465 2470 2475 2480

Ser Ile Ile Gln Tyr Arg Tyr Ala Asn Leu Lys Pro Pro Leu His Ile
 2485 2490 2495

<210> 80
 <211> 3135
 <212> PRT
 <213> Plasmodium falciparum

<400> 80
 Met Lys Lys Ile Ile Thr Leu Lys Asn Leu Phe Leu Ile Ile Leu Val
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Tyr Ile Phe Ser Glu Lys Lys Asp Leu Arg Cys Asn Val Ile Lys Gly
 20 25 30

Asn Asn Ile Lys Asp Asp Glu Asp Lys Arg Phe His Leu Phe Tyr Tyr
 35 40 45

Ser His Asn Leu Phe Lys Thr Pro Glu Thr Lys Glu Lys Lys Asn Lys
 50 55 60

Lys Glu Cys Phe Tyr Lys Asn Gly Gly Ile Tyr Asn Leu Ser Lys Glu
 65 70 75 80

Ile Arg Met Arg Lys Asp Thr Ser Val Lys Ile Lys Gln Arg Thr Cys
 85 90 95

Pro Phe His Lys Glu Gly Ser Ser Phe Glu Met Gly Ser Lys Asn Ile
 100 105 110

Thr Cys Phe Tyr Pro Ile Val Gly Lys Lys Glu Arg Lys Thr Leu Asp
 115 120 125

Thr Ile Ile Ile Lys Lys Asn Val Thr Asn Asp His Val Val Ser Ser
 130 135 140

Asp Met His Ser Asn Val Gln Glu Lys Asn Met Ile Leu Ile Arg Phe Asn
 145 150 155 160
 Ile Asp Lys Glu Asn Lys Asn Asp Ile Gln Asn Val Glu Glu Lys Ile
 165 170 175
 Gln Arg Asp Thr Tyr Glu Asn Lys Asp Tyr Glu Ser Asp Asp Thr Leu
 180 185 190
 Ile Glu Trp Phe Asp Asp Asn Thr Asn Glu Glu Asn Phe Leu Leu Thr
 195 200 205
 Phe Leu Lys Arg Cys Leu Met Lys Ile Phe Ser Ser Pro Lys Arg Lys
 210 215 220
 Lys Thr Val Val Gln Lys Lys His Lys Ser Asn Phe Phe Ile Asn Ser
 225 230 235 240
 Ser Leu Lys Tyr Ile Tyr Met Tyr Leu Thr Pro Ser Asp Ser Phe Asn
 245 250 255
 Leu Val Arg Arg Asn Arg Asn Leu Asp Glu Glu Asp Met Ser Pro Arg
 260 265 270
 Asp Asn Phe Val Ile Asp Asp Glu Glu Glu Glu Glu Glu Glu Glu
 275 280 285
 Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu
 290 295 300
 Tyr Asp Asp Tyr Val Tyr Glu Glu Ser Gly Asp Glu Thr Glu Glu Gln
 305 310 315 320
 Leu Gln Glu Glu His Gln Glu Glu Val Gly Ala Glu Ser Ser Glu Glu
 325 330 335
 Ser Phe Asn Asp Glu Asp Glu Asp Ser Val Glu Ala Arg Asp Gly Asp
 340 345 350
 Met Ile Arg Val Asp Glu Tyr Tyr Glu Asp Gln Asp Gly Asp Thr Tyr
 355 360 365
 Asp Ser Thr Ile Lys Asn Glu Asp Val Asp Glu Glu Val Gly Glu Glu
 370 375 380
 Val Gly Glu Glu Val Gly Glu Glu Val Gly Glu Glu Val Gly Glu Glu
 385 390 395 400
 Val Gly Glu Glu Val Gly Glu Glu Val Gly Glu Glu Val Gly Glu Glu
 405 410 415
 Glu Gly Glu Glu Val Gly Glu Gly Val Gly Glu Glu Val Gly Glu Glu
 420 425 430
 Glu Gly Glu Glu Val Gly Glu Glu Glu Gly Glu Tyr Val Asp Glu Lys
 435 440 445
 Glu Arg Gln Gly Glu Ile Tyr Pro Phe Gly Asp Glu Glu Glu Lys Asp
 450 455 460
 Glu Gly Gly Glu Ser Phe Thr Tyr Glu Lys Ser Glu Val Asp Lys Thr
 465 470 475 480
 Asp Leu Phe Lys Phe Ile Glu Gly Gly Glu Gly Asp Asp Val Tyr Lys
 485 490 495
 Val Asp Gly Ser Lys Val Leu Leu Asp Asp Asp Thr Ile Ser Arg Val
 500 505 510
 Ser Lys Lys His Thr Ala Arg Asp Gly Glu Tyr Gly Glu Tyr Gly Glu

515 520 525
 Ala Val Glu Asp Gly Glu Asn Val Ile Lys Ile Ile Arg Ser Val Leu
 530 535 540
 Gln Ser Gly Ala Leu Pro Ser Val Gly Val Asp Glu Leu Asp Lys Ile
 545 550 555 560
 Asp Leu Ser Tyr Glu Thr Thr Glu Ser Gly Asp Thr Ala Val Ser Glu
 565 570 575
 Asp Ser Tyr Asp Lys Tyr Ala Ser Asn Asn Thr Asn Lys Glu Tyr Val
 580 585 590
 Cys Asp Phe Thr Asp Gln Leu Lys Pro Thr Glu Ser Gly Pro Lys Val
 595 600 605
 Lys Lys Cys Glu Val Lys Val Asn Glu Pro Leu Ile Lys Val Lys Ile
 610 615 620
 Ile Cys Pro Leu Lys Gly Ser Val Glu Lys Leu Tyr Asp Asn Ile Glu
 625 630 635 640
 Tyr Val Pro Lys Lys Ser Pro Tyr Val Val Leu Thr Lys Glu Glu Thr
 645 650 655
 Lys Leu Lys Glu Lys Leu Leu Ser Lys Leu Ile Tyr Gly Leu Leu Ile
 660 665 670
 Ser Pro Thr Val Asn Glu Lys Glu Asn Asn Phe Lys Glu Gly Val Ile
 675 680 685
 Glu Phe Thr Leu Pro Pro Val Val His Lys Ala Thr Val Phe Tyr Phe
 690 695 700
 Ile Cys Asp Asn Ser Lys Thr Glu Asp Asp Asn Lys Lys Gly Asn Arg
 705 710 715 720
 Gly Ile Val Glu Val Tyr Val Glu Pro Tyr Gly Asn Lys Ile Asn Gly
 725 730 735
 Cys Ala Phe Leu Asp Glu Asp Glu Glu Glu Lys Tyr Gly Asn Gln
 740 745 750
 Ile Glu Glu Asp Glu His Asn Glu Lys Ile Lys Met Lys Thr Phe Phe
 755 760 765
 Thr Gln Asn Ile Tyr Lys Lys Asn Asn Ile Tyr Pro Cys Tyr Met Lys
 770 775 780
 Leu Tyr Ser Gly Asp Ile Gly Gly Ile Leu Phe Pro Lys Asn Ile Lys
 785 790 795 800
 Ser Thr Thr Cys Phe Glu Glu Met Ile Pro Tyr Asn Lys Glu Ile Lys
 805 810 815
 Trp Asn Lys Glu Asn Lys Ser Leu Gly Asn Leu Val Asn Asn Ser Val
 820 825 830
 Val Tyr Asn Lys Glu Met Asn Ala Lys Tyr Phe Asn Val Gln Tyr Val
 835 840 845
 His Ile Pro Thr Ser Tyr Lys Asp Thr Leu Asn Leu Phe Cys Ser Ile
 850 855 860
 Ile Leu Lys Glu Glu Glu Ser Asn Leu Ile Ser Thr Ser Tyr Leu Val
 865 870 875 880
 Tyr Val Ser Ile Asn Glu Glu Leu Asn Phe Ser Leu Phe Asp Phe Tyr
 885 890 895

Glu Ser Phe Val Pro Ile Lys Lys Thr Ile Gln Val Ala Gln Lys Asn
 900 905 910
 Val Asn Asn Lys Glu His Asp Tyr Thr Cys Asp Phe Thr Asp Lys Leu
 915 920 925
 Asp Lys Thr Val Pro Ser Thr Ala Asn Gly Lys Lys Leu Phe Ile Cys
 930 935 940
 Arg Lys His Leu Lys Glu Phe Asp Thr Phe Thr Leu Lys Cys Asn Val
 945 950 955 960
 Asn Lys Thr Gln Tyr Pro Asn Ile Glu Ile Phe Pro Lys Thr Leu Lys
 965 970 975
 Asp Lys Lys Glu Val Leu Lys Leu Asp Leu Asp Ile Gln Tyr Gln Met
 980 985 990
 Phe Ser Lys Phe Phe Lys Phe Asn Thr Gln Asn Ala Lys Tyr Leu Asn
 995 1000 1005
 Leu Tyr Pro Tyr Tyr Leu Ile Phe Pro Phe Asn His Ile Gly Lys Lys
 1010 1015 1020
 Glu Leu Lys Asn Asn Pro Thr Tyr Lys Asn His Lys Asp Val Lys Tyr
 1025 1030 1035 1040
 Phe Glu Gln Ser Ser Val Leu Ser Pro Leu Ser Ser Ala Asp Ser Leu
 1045 1050 1055
 Gly Lys Leu Leu Asn Phe Leu Asp Thr Gln Glu Thr Val Cys Leu Thr
 1060 1065 1070
 Glu Lys Ile Arg Tyr Leu Asn Leu Ser Ile Asn Glu Leu Gly Ser Asp
 1075 1080 1085
 Asn Asn Thr Phe Ser Val Thr Phe Gln Val Pro Pro Tyr Ile Asp Ile
 1090 1095 1100
 Lys Glu Pro Phe Tyr Phe Met Phe Gly Cys Asn Asn Asn Lys Gly Glu
 1105 1110 1115 1120
 Gly Asn Ile Gly Ile Val Glu Leu Leu Ile Ser Lys Gln Glu Glu Lys
 1125 1130 1135
 Ile Lys Gly Cys Asn Phe His Glu Ser Lys Leu Asp Tyr Phe Asn Glu
 1140 1145 1150
 Asn Ile Ser Ser Asp Thr His Glu Cys Thr Leu His Ala Tyr Glu Asn
 1155 1160 1165
 Asp Ile Ile Gly Phe Asn Cys Leu Glu Thr Thr His Pro Asn Glu Val
 1170 1175 1180
 Glu Val Glu Val Glu Asp Ala Glu Ile Tyr Leu Gln Pro Glu Asn Cys
 1185 1190 1195 1200
 Phe Asn Asn Val Tyr Lys Gly Leu Asn Ser Val Asp Ile Thr Thr Ile
 1205 1210 1215
 Leu Lys Asn Ala Gln Thr Tyr Asn Ile Asn Asn Lys Lys Thr Pro Thr
 1220 1225 1230
 Phe Leu Lys Ile Pro Pro Tyr Asn Leu Leu Glu Asp Val Glu Ile Ser
 1235 1240 1245
 Cys Gln Cys Thr Ile Lys Gln Val Val Lys Lys Ile Lys Val Ile Ile
 1250 1255 1260

Thr Lys Asn Asp Thr Val Leu Leu Lys Arg Glu Val Gln Ser Glu¹²⁷⁵ Ser
 1265 1270 1275 1280
 Thr Leu Asp Asp Lys Ile Tyr Lys Cys Glu His Glu Asn Phe Ile Asn
 1285 1290 1295
 Pro Arg Val Asn Lys Thr Phe Asp Glu Asn Val Glu Tyr Thr Cys Asn
 1300 1305 1310
 Ile Lys Ile Glu Asn Phe Phe Asn Tyr Ile Gln Ile Phe Cys Pro Ala
 1315 1320 1325
 Lys Asp Leu Gly Ile Tyr Lys Asn Ile Gln Met Tyr Tyr Asp Ile Val
 1330 1335 1340
 Lys Pro Thr Arg Val Pro Gln Phe Lys Lys Phe Asn Asn Glu Glu Leu
 1345 1350 1355 1360
 His Lys Leu Ile Pro Asn Ser Glu Met Leu His Lys Thr Lys Glu Met
 1365 1370 1375
 Leu Ile Leu Tyr Asn Glu Glu Lys Val Asp Leu Leu His Phe Tyr Val
 1380 1385 1390
 Phe Leu Pro Ile Tyr Ile Lys Asp Ile Tyr Glu Phe Asn Ile Val Cys
 1395 1400 1405
 Asp Asn Ser Lys Thr Met Trp Lys Asn Gln Leu Gly Gly Lys Val Ile
 1410 1415 1420
 Tyr His Ile Thr Val Ser Lys Arg Glu Gln Lys Val Lys Gly Cys Ser
 1425 1430 1435 1440
 Phe Asp Asn Glu His Ala His Met Phe Ser Tyr Asn Lys Thr Asn Val
 1445 1450 1455
 Lys Asn Cys Ile Ile Asp Ala Lys Pro Lys Asp Leu Ile Gly Phe Val
 1460 1465 1470
 Cys Pro Ser Gly Thr Leu Lys Leu Thr Asn Cys Phe Lys Asp Ala Ile
 1475 1480 1485
 Val His Thr Asn Leu Thr Asn Ile Asn Gly Ile Leu Tyr Leu Lys Asn
 1490 1495 1500
 Asn Leu Ala Asn Phe Thr Tyr Lys His Gln Phe Asn Tyr Met Glu Ile
 1505 1510 1515 1520
 Pro Ala Leu Met Asp Asn Asp Ile Ser Phe Lys Cys Ile Cys Val Asp
 1525 1530 1535
 Leu Lys Lys Lys Lys Tyr Asn Val Lys Ser Pro Leu Gly Pro Lys Val
 1540 1545 1550
 Leu Arg Ala Leu Tyr Lys Lys Leu Asn Ile Lys Phe Asp Asn Tyr Val
 1555 1560 1565
 Thr Gly Thr Asp Gln Asn Lys Tyr Leu Met Thr Tyr Met Asp Leu His
 1570 1575 1580
 Leu Ser His Lys Arg Asn Tyr Leu Lys Glu Leu Phe His Asp Leu Gly
 1585 1590 1595 1600
 Lys Lys Lys Pro Ala Asp Thr Asp Ala Asn Pro Glu Ser Ile Ile Glu
 1605 1610 1615
 Ser Leu Ser Ile Asn Glu Ser Asn Glu Ser Gly Pro Phe Pro Thr Gly
 1620 1625 1630
 Asp Val Asp Ala Glu His Leu Ile Leu Glu Gly Tyr Asp Thr Trp Glu
 168

169

Cys Lys Thr Ser His Thr Asn Thr Ile Gly Thr Met Lys Val Thr Leu
 2020 2025 2030
 Asn Lys Asp Glu Lys Glu Glu Glu Asp Phe Lys Thr Ala Gln Gly Ile
 2035 2040 2045
 Lys His Asn Asn Val His Leu Cys Asn Phe Phe Asp Asn Pro Glu Leu
 2050 2055 2060
 Thr Phe Asp Asn Asn Lys Ile Val Leu Cys Lys Ile Asp Ala Glu Leu
 2065 2070 2075 2080
 Phe Ser Glu Val Ile Ile Gln Leu Pro Ile Phe Gly Thr Lys Asn Val
 2085 2090 2095
 Glu Glu Gly Val Gln Asn Glu Glu Tyr Lys Lys Phe Ser Leu Lys Pro
 2100 2105 2110
 Ser Leu Val Phe Asp Asp Asn Asn Asn Asp Ile Lys Val Ile Gly Lys
 2115 2120 2125
 Glu Lys Asn Glu Val Ser Ile Ser Leu Ala Leu Lys Gly Val Tyr Gly
 2130 2135 2140
 Asn Arg Ile Phe Thr Phe Asp Lys Asn Gly Lys Lys Gly Glu Gly Ile
 2145 2150 2155 2160
 Ser Phe Phe Ile Pro Pro Ile Lys Gln Asp Thr Asp Leu Lys Phe Ile
 2165 2170 2175
 Ile Asn Glu Thr Ile Asp Asn Ser Asn Ile Lys Gln Arg Gly Leu Ile
 2180 2185 2190
 Tyr Ile Phe Val Arg Lys Asn Val Ser Glu Asn Ser Phe Lys Leu Cys
 2195 2200 2205
 Asp Phe Thr Thr Gly Ser Thr Ser Leu Met Glu Leu Asn Ser Gln Val
 2210 2215 2220
 Lys Glu Lys Lys Cys Thr Val Lys Ile Lys Lys Gly Asp Ile Phe Gly
 2225 2230 2235 2240
 Leu Lys Cys Pro Lys Gly Phe Ala Ile Phe Pro Gln Ala Cys Phe Ser
 2245 2250 2255
 Asn Val Leu Leu Glu Tyr Tyr Lys Ser Asp Tyr Glu Asp Ser Glu His
 2260 2265 2270
 Ile Asn Tyr Tyr Ile His Lys Asp Lys Lys Tyr Asn Leu Lys Pro Lys
 2275 2280 2285
 Asp Val Ile Glu Leu Met Asp Glu Asn Phe Arg Glu Leu Gln Asn Ile
 2290 2295 2300
 Gln Gln Tyr Thr Gly Ile Ser Asn Ile Thr Asp Val Leu His Phe Lys
 2305 2310 2315 2320
 Asn Phe Asn Leu Gly Asn Leu Pro Leu Asn Phe Lys Asn His Tyr Ser
 2325 2330 2335
 Thr Ala Tyr Ala Lys Val Pro Asp Thr Phe Asn Ser Ile Ile Asn Phe
 2340 2345 2350
 Ser Cys Asn Cys Tyr Asn Pro Glu Lys His Val Tyr Gly Thr Met Gln
 2355 2360 2365
 Val Glu Ser Asp Asn Arg Asn Phe Asp Asn Ile Lys Lys Asn Glu Asn
 2370 2375 2380

Val Ile Lys Asn Phe Leu Leu Pro Asn Ile Glu Lys Tyr Ala Leu Leu
 2385 2390 2395 2400
 Leu Asp Asp Glu Glu Arg Gln Lys Lys Ile Lys Gln Gln Gln Glu Glu
 2405 2410 2415
 Glu Gln Gln Glu Gln Ile Leu Lys Asp Gln Asp Asp Arg Leu Ser Arg
 2420 2425 2430
 His Asp Asp Tyr Asn Lys Asn His Thr Tyr Ile Leu Tyr Asp Ser Asn
 2435 2440 2445
 Glu His Ile Cys Asp Tyr Glu Lys Asn Glu Ser Leu Ile Ser Thr Leu
 2450 2455 2460
 Pro Asn Asp Thr Lys Lys Ile Gln Lys Ser Ile Cys Lys Ile Asn Ala
 2465 2470 2475 2480
 Lys Ala Leu Asp Val Val Thr Ile Lys Cys Pro His Thr Lys Asn Phe
 2485 2490 2495
 Thr Pro Lys Asp Tyr Phe Pro Asn Ser Ser Leu Ile Thr Asn Asp Lys
 2500 2505 2510
 Lys Ile Val Ile Thr Phe Asp Lys Lys Asn Phe Val Thr Tyr Ile Asp
 2515 2520 2525
 Pro Thr Lys Lys Thr Phe Ser Leu Lys Asp Ile Tyr Ile Gln Ser Phe
 2530 2535 2540
 Tyr Gly Val Ser Leu Asp His Leu Asn Gln Ile Lys Lys Ile His Glu
 2545 2550 2555 2560
 Glu Trp Asp Asp Val His Leu Phe Tyr Pro Pro His Asn Val Leu His
 2565 2570 2575
 Asn Val Val Leu Asn Asn His Ile Val Asn Leu Ser Ser Ala Leu Glu
 2580 2585 2590
 Gly Val Leu Phe Met Lys Ser Lys Val Thr Gly Asp Glu Thr Ala Thr
 2595 2600 2605
 Lys Lys Asn Thr Thr Leu Pro Thr Asp Gly Val Ser Ser Ile Leu Ile
 2610 2615 2620
 Pro Pro Tyr Val Lys Glu Asp Ile Thr Phe His Leu Phe Cys Gly Lys
 2625 2630 2635 2640
 Ser Thr Thr Lys Lys Pro Asn Lys Lys Asn Thr Ser Leu Ala Leu Ile
 2645 2650 2655
 His Ile His Ile Ser Ser Asn Arg Asn Ile Ile His Gly Cys Asp Phe
 2660 2665 2670
 Leu Tyr Leu Glu Asn Gln Thr Asn Asp Ala Ile Ser Asn Asn Asn Asn
 2675 2680 2685
 Asn Ser Tyr Ser Ile Phe Thr His Asn Lys Asn Thr Glu Asn Asn Leu
 2690 2695 2700
 Ile Cys Asp Ile Ser Leu Ile Pro Lys Thr Val Ile Gly Ile Lys Cys
 2705 2710 2715 2720
 Pro Asn Lys Lys Leu Asn Pro Gln Thr Cys Phe Asp Glu Val Tyr Tyr
 2725 2730 2735
 Val Lys Gln Glu Asp Val Pro Ser Lys Thr Ile Thr Ala Asp Lys Tyr
 2740 2745 2750
 Asn Thr Phe Ser Lys Asp Lys Ile Gly Asn Ile Leu Lys Asn Ala Ile

172

<210> 81
 <211> 679
 <212> PRT
 <213> Plasmodium falciparum

<400> 81
 Met Ser Asp Asp Asp Asp Lys Ile Tyr Ile Tyr Ser Asp Leu Phe Ser
 1 5 10 15
 Lys Asn Phe Ser Asp Asp Glu Lys Asp Asp Ser Tyr Glu Arg Glu Lys
 20 25 30
 Gln Val Tyr Ser Gly Ser Glu Thr Gln Asn Ala Glu Asn Glu Tyr Ser
 35 40 45
 Lys Leu Arg Ala Gln Asn Ser Thr Ile Leu Asn Asn Tyr Phe Asp Asn
 50 55 60
 Asp Asn Ile Lys Asn Val Glu Asn Leu Lys Ser Asn Asp Pro Asp Gln
 65 70 75 80
 Ile Asp Leu Ile Leu Phe Pro Val Asn Lys Asn Tyr Tyr Met Asn Leu
 85 90 95
 Phe Asp Gly Gln Leu Ile Glu Asn Ile His Ser Ile Lys Leu Arg Lys
 100 105 110
 Ala Gly Phe Tyr Ala Ile Tyr Val Glu Asn Asn Asn Asn Ser Lys Trp
 115 120 125
 Asp Gly Ile Tyr Phe Gly Leu Ser Arg Met Gln Val Glu Leu Asp Tyr
 130 135 140
 Lys Leu Ile Thr Lys Lys Asn Lys Asp Gly Gly Glu Tyr Glu Lys Arg
 145 150 155 160
 Asn Thr Ser Ser Tyr Asp Asn Thr Glu Ser Val Gln Asn Thr Val Gly
 165 170 175
 Ser Glu Lys Glu Glu Thr Glu Asn Lys Asn Glu Glu Thr Ser Asn Tyr
 180 185 190
 Asn Ser Asn Leu Asn Asn Glu Ile Asn Lys Ile Cys Lys Tyr Asn Leu
 195 200 205
 Asp Gln Thr Asp Ile Leu Leu Asp Asp Ser Asn Ser Glu Arg Arg Arg
 210 215 220
 Asn Ser Lys Phe Lys Ile Lys Asn Thr Asn Tyr Tyr Asp Asn Leu Met
 225 230 235 240
 Leu Gln Asn Lys Tyr Thr Asn Ser Ile Leu Tyr Asp Asp Asp Asp Asp
 245 250 255
 Lys Asn Asn Thr Glu Thr Tyr Thr Cys Thr Phe Lys Thr Glu Asp Gln
 260 265 270
 Ile Arg Val Pro Ser Gln Lys Lys Lys Tyr Ile Tyr Leu Tyr Asn Lys
 275 280 285
 Tyr Asp Asn Ala Thr Leu Asp Leu Asn Val His Thr Tyr Met Ser Leu
 290 295 300
 Gly Met Ser Ile Leu Cys Lys Tyr Ser Leu Leu Tyr Cys Gly Lys Tyr
 305 310 315 320
 Asn His Ile Pro Arg Asp Pro Tyr Thr Pro Phe Lys Lys Pro Val Ser
 325 330 335

Ile Leu Ser Leu Asp Gly Gly Gly Ile Leu Thr Ile Ser Thr Leu Leu
 340 345 350
 Val Leu Asn Arg Leu Glu Ala Glu Leu Arg Lys Glu Ile Gly Ser Asp
 355 360 365
 Asp Ile Lys Leu Ile Asp Cys Phe Asp Met Val Cys Gly Thr Ser Ala
 370 375 380
 Gly Gly Leu Ile Ser Leu Ala Leu Leu Arg Glu Ile Asp Leu Gln Asp
 385 390 395 400
 Val Ser Asn Met Trp Pro Ser Thr Ile Lys Lys Val Phe Glu Gly Asn
 405 410 415
 Arg Asn Ile Ile Ser Gly Ile Phe Phe Glu Gly Tyr Asp Val Asn Asn
 420 425 430
 Val Lys Asp Val Phe Leu Glu Arg Met Gly Asn Lys Phe Met Ser Ser
 435 440 445
 Tyr Lys Lys Phe Tyr Cys Phe Val Thr Ala Thr Asp Val Lys His Lys
 450 455 460
 Pro Tyr Lys Leu Phe Leu Ile Arg Asn Tyr Thr His Lys Tyr Asn Ser
 465 470 475 480
 Ile Asn Ala Glu Ser Tyr Asp Gly Ile Asn Lys Val Pro Leu Trp Leu
 485 490 495
 Ala Ala Trp Ala Thr Ala Ser Ala Pro Thr Tyr Leu Lys Gly Pro Ser
 500 505 510
 Ala Glu Asp Ile Lys Lys Leu Gly Ile Asn Ile Lys Pro Glu Ile His
 515 520 525
 Leu Val Asp Gly Ala Leu Lys Ala Ser Asn Pro Ala Leu Ile Ala Leu
 530 535 540
 Glu Glu Cys Ala Arg Leu Asn Asn Lys Asn Leu Ser Thr Phe Ile Lys
 545 550 555 560
 Glu Asp Leu Asp Thr Leu Val Ser Ile Gly Thr Gly Gln Val Pro Thr
 565 570 575
 Lys Leu Thr Gln Ser Gly Ala Ser Ser Lys Ser Ala Ser Thr Phe Glu
 580 585 590
 Ile Leu Ile Asn Ser Thr His Leu Leu Thr Arg Ala Asn Asp Thr His
 595 600 605
 Arg Glu Val Leu Gln Arg Leu Ala Asp Arg Glu Asn Thr Tyr Phe Arg
 610 615 620
 Phe Asn Val Pro His Ile Gly Asp Ile Glu Ile Asp Ser Gln Asp Val
 625 630 635 640
 Arg Asp Phe Asp Leu Ile Ser Lys Ala Thr Gln Asp Tyr Leu Phe Asp
 645 650 655
 Glu Lys Phe Tyr Glu Ile Lys Arg Leu Ala His Lys Leu Ala Asn Asn
 660 665 670
 Tyr Ile Arg Ser Lys Tyr Leu
 675

<210> 82

<211> 106

<212> PRT

<213> Plasmodium falciparum

<400> 82

Met Tyr Ile Cys Phe Phe Phe Phe Phe Phe Phe Leu Val Ile Lys Leu
 1 5 10 15

Gly Glu Asp Glu Asn Phe Gly Ser Ser Cys Phe Tyr Ser Leu Gly Asn
 20 25 30

Thr Lys Ile Leu Thr Thr Val Tyr Gly Pro Asn Pro Asp Ser Lys Tyr
 35 40 45

Ala Thr Tyr Ser Lys Gly Lys Val Phe Leu Asp Val Lys Ser Leu Asn
 50 55 60

Ile Asn Thr Ile Gly Ala Ser Asp Arg Val Leu Tyr Ile Tyr Gly Phe
 65 70 75 80

Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Ile Leu Asn Arg Ser Tyr
 85 90 95

Phe Phe Leu Val Leu Phe Ile Ile Phe Ile
 100 105

<210> 83

<211> 240

<212> PRT

<213> Plasmodium falciparum

<400> 83

Met Phe Leu Lys Gly Tyr Thr Ser Asn Val Val Leu Ile Ile Leu Thr
 1 5 10 15

Phe Phe Ile Leu Leu Thr Lys Glu Glu Lys Asn Ile Lys Asn Asn Ile
 20 25 30

Ser Gly Tyr Cys Phe Leu Asn Phe Gly Leu Lys Lys Asn Ala Ile Ile
 35 40 45

Lys Lys Arg Glu Lys Gln Asn Leu Lys Leu Phe Cys Tyr Asn Gly Ile
 50 55 60

Arg Ile Gly Gln Gly Tyr Asp Ile His Lys Ile Lys Val Leu Asp Glu
 65 70 75 80

Glu Tyr Asn Thr Tyr Ala Asn Asn Asp Phe Asn Lys Asn Glu Gln Ser
 85 90 95

Phe Lys Thr Leu Thr Leu Gly Gly Val Lys Ile Asn Asn Val Leu Val
 100 105 110

Leu Ser His Ser Asp Gly Asp Ile Ile Tyr His Ser Ile Val Asp Ser
 115 120 125

Ile Leu Gly Ala Leu Gly Ser Leu Asp Ile Gly Thr Leu Phe Pro Asp
 130 135 140

Lys Asp Glu Lys Asn Lys Asn Lys Asn Ser Ala Ile Phe Leu Arg Tyr
 145 150 155 160

Ala Arg Leu Leu Ile Tyr Lys Lys Asn Tyr Asp Ile Gly Asn Val Asp
 165 170 175

Ile Asn Val Ile Ala Gln Val Pro Lys Ile Ser Asn Ile Arg Lys Asn
 180 185 190

Ile Ile Lys Asn Ile Ser Thr Val Leu Asn Ile Asp Glu Ser Gln Ile
 195 200 205

Ser Val Lys Gly Lys Thr His Glu Lys Leu Gly Val Ile Gly Glu Lys
 210 215 220
 Lys Ala Ile Glu Cys Phe Ala Asn Ile Leu Leu Ile Pro Lys Asn Ser
 225 230 235 240

<210> 84
 <211> 273
 <212> PRT
 <213> Plasmodium falciparum

<400> 84
 Met Glu Asp Gln Asn Ala Glu Tyr Thr Lys Lys Asn Asn Ile Ser Asp
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 Lys Leu Glu Arg Leu Arg Glu Leu Phe Ile Asn Ala Asp Lys Asn Thr
 20 25 30
 His Glu Met Leu Lys Cys Asn Val Asp Glu Lys Ile Trp Thr Phe Phe
 35 40 45
 Leu Ser Tyr His Ile Asn Lys Asp Met Lys Ile Thr Glu Ser Ser Trp
 50 55 60
 Leu Phe Asn Glu Tyr Tyr Phe Tyr Arg Tyr Leu Cys Cys Ala Tyr Asp
 65 70 75 80
 Phe Glu Lys Thr Asn Tyr Asp Phe Phe Gln Tyr Glu Lys Gln Asp Ser
 85 90 95
 Ile Asn Cys Asn Lys Val Ile Ile Glu Asn Ile Cys Thr Cys Ala Lys
 100 105 110
 Thr Leu Ile Glu Leu Tyr Asp Lys Asn Pro Gln Lys Lys Ile Phe Ser
 115 120 125
 Val Phe Phe Tyr Tyr Ala Leu Trp Ala Asn Gln Phe Asp Leu Ser Trp
 130 135 140
 Asn Pro Thr Lys Asn Lys Ser Glu Gln His Asn Val Gln Glu Lys Asp
 145 150 155 160
 Ile Arg Lys Lys Thr Leu Arg Glu Lys Gln Phe Cys Phe Asp Thr Asp
 165 170 175
 Asp Ile Asp Lys Leu Tyr Asn Ser Phe Tyr Met Glu Asn Ile Leu Cys
 180 185 190
 Asn Asp Ile Asn Asp Ile Tyr Lys Asp Met Thr Val Gln Lys His Lys
 195 200 205
 Arg Phe Asp Ile Val Leu Asp Asn Met Gly Val Glu Phe Ile Thr Asp
 210 215 220
 Phe Cys Leu Leu Tyr Phe Leu Thr His Tyr Phe Glu Glu Ile Thr Ile
 225 230 235 240
 His Val Lys Lys Phe Pro Leu Phe Val Ser Asp Thr Met Ile Lys Asp
 245 250 255
 Ile His Tyr Thr Leu Asn Val Leu Cys Asn Asp Glu Lys Val Lys Ile
 260 265 270

Lys

<210> 85
 <211> 504
 <212> PRT
 <213> Plasmodium falciparum

<400> 85
 Met Asn Val Ser Val Thr Ile Lys Gly Asn Leu Ser Asn Ser Ser Thr
 1 5 10 15
 Glu Lys Asn Lys Asn Ser Ser Lys Lys Asn Asp Ala Ser Val Phe Phe
 20 25 30
 Lys Phe Lys Lys Glu Asn Leu Asp Lys Lys Ile Ile Lys Asn Asn Ile
 35 40 45
 Val Arg Lys Glu Lys Asn Ser Leu Asn Lys Lys Gly Thr Ser Asn Asn
 50 55 60
 Thr Thr Asn Ser Phe Ser Lys Gly Asn Asn Ile Lys Leu Ser Gly Asp
 65 70 75 80
 Thr His Ala Arg Asn Val Ile Asn Glu Lys Lys Ile Leu Ser Glu Lys
 85 90 95
 Lys Asn Gly Phe Thr Thr Lys Tyr Asp Ser Lys Lys Ser Tyr Ser Ser
 100 105 110
 Lys Lys Ser Ser Leu Leu Asn Lys Leu Pro Ser Ser Glu Ile Thr Leu
 115 120 125
 Asn Asn Ser Asn Leu Lys Phe Phe Glu Lys Lys Lys Ser Lys Asp Lys
 130 135 140
 Gln Asn Val Ile Asn Asn Ile Asn Gly Ser Lys Leu Ile Asn Asn Val
 145 150 155 160
 Asp Lys Leu Tyr Thr Asn Asn Asp Asn Ile Asn Asn Asn Ile Asn Glu
 165 170 175
 Lys Lys Ser Ser Asn Ile Phe Thr Lys Asn Ile Gln Lys Lys Asn Lys
 180 185 190
 Thr Asn Ser Ser Asn Asn Leu Asn Thr Ser Asn Val Asn Lys Lys Thr
 195 200 205
 Tyr Lys Leu Gly Asn Val Leu Ala Gln Pro Glu Lys Phe Ile Arg Lys
 210 215 220
 Lys Lys Asn Lys Ile Ile Lys Asn Leu Asn Ser Leu Lys Arg Asn Ile
 225 230 235 240
 Asp Ile Met Met Lys Ser Glu Gln Asp Gln Asn Ile Leu Glu Glu His
 245 250 255
 Met Ser Ser Val Ser Ser Ser Asn Glu Lys Gln Lys Asn Lys Asn Asn
 260 265 270
 Asn Ile Glu Gln Asn Glu Asn Met Thr Lys Leu Glu Lys Asn Gly Asp
 275 280 285
 Asp Asn Ile Tyr Met Lys Asp Asn Lys Lys Asn Asp Glu Gln Lys Gly
 290 295 300
 Asp Asn Asn Thr Lys Glu Gln Ile His Ile Asn Asp Asp Asp Glu Lys
 305 310 315 320
 Lys Thr Phe His Asp Lys Lys Asp Asp Met Glu Asn Asn Thr Gln Glu
 325 330 335

Thr Lys Thr Asn Ile Phe Gln Asp Asn Ala Val Asp Thr Ile Asn Gly
 340 345 350
 His Ile Cys Lys Asp Glu Lys Met Leu Phe Pro Tyr Phe Ile Glu Ala
 355 360 365
 Thr Tyr Asp Lys Asn Thr Asp Ile Phe Asn Glu Lys Tyr Asp Asp Asp
 370 375 380
 Asp Asn Asn Lys Glu Thr Asn Asn Leu Leu Leu Pro Gly Tyr His Asn
 385 390 395 400
 Val Thr Phe Glu Asn Val Ser Glu Asn Asn Lys Met Tyr Asn Ile Asn
 405 410 415
 Asn Asn Asn Lys Asn Asn Asn Asn Pro Ile Ser Asn Asn Ile Tyr Ala
 420 425 430
 Thr Asn Ser Ser Phe Pro Pro Tyr Lys Phe Ile Ser Tyr Leu Arg Pro
 435 440 445
 Lys Leu Thr Pro Lys Ala Tyr His Leu Lys Asn Asn Glu Ile Leu Asn
 450 455 460
 Asn Phe Leu Phe Thr Ser Ser Asp Ile Thr Arg Gly Thr Ile Tyr Gln
 465 470 475 480
 Gln Tyr Asn Met Thr Val Thr Tyr Pro Tyr Gly Val Pro Tyr Ile Asn
 485 490 495
 Met Lys Asn Lys Ile Thr Lys Lys
 500

<210> 86
 <211> 1138
 <212> PRT
 <213> Plasmodium falciparum

<400> 86
 Met Val Val His Asn Lys Asn Ile Ala Thr His Lys Phe Pro Leu His
 1 5 10 15
 Lys Lys Tyr Lys Lys Ile Met Ser Gln Lys Leu Arg Ser Ser Val Thr
 20 25 30
 Arg Thr Ser Asn Glu Glu Ser Asn Glu Asp Asp Lys Asn Cys Val Asn
 35 40 45
 Val Asn Ser Glu Glu Phe Ser Val Lys Lys Ile Arg Ser Ile Leu Tyr
 50 55 60
 Glu Glu Ser Ile Asn Phe Ser Asp Lys Asn Thr Tyr Tyr Lys Ser Ser
 65 70 75 80
 Asn Ile His Asn Tyr Asn Asn Ile Asp Thr Tyr Met Asp Tyr Ile Lys
 85 90 95
 Lys Ser Asn Tyr Ala Arg Ser Tyr Glu Gln Glu Asn Ile Tyr Asn Glu
 100 105 110
 Ala Leu Asn Leu Tyr Asn Asn Arg Asn Val Tyr Ile Lys Lys Lys Tyr
 115 120 125
 Arg Asn Asp Ser Tyr Tyr Asn Ile Lys Arg Asp Leu Lys Arg Gly His
 130 135 140
 Tyr Phe Gly Asp Asp Ala Glu Tyr Met Asp Tyr Met Asp Asn Glu Ser
 145 150 155 160

Ile Asp Tyr Asn Asn Met Asn Asp Gln Tyr Lys Asp Gly Asn His Ile
 165 170 175
 Asp Asp Gln Tyr Lys Asp Gly Asn His Ile Asp Glu Lys His Lys Asp
 180 185 190
 Gly Asn Arg Ile Asp Asp Gln Tyr Lys Asp Gly Asn Arg Ile Asp Asp
 195 200 205
 Lys Ile Val Lys Ser Glu His Ile Cys Asn Glu Lys Lys Thr Lys Gly
 210 215 220
 Val Asn Gly Lys Ser Lys Tyr Tyr Ile His Asp Met Asn Arg Lys Asp
 225 230 235 240
 Lys Gln Lys Lys Asn Lys His Asn Asn Ile Asn Tyr Asn Asn Asn Asp
 245 250 255
 Asp Asn Val Asn Asn Ser Cys Glu Tyr Asn Phe Ser Lys Glu Asn Ser
 260 265 270
 Gln Asn Met Cys His Tyr Glu Asn Lys Ile Tyr Asp Lys Tyr Gly Glu
 275 280 285
 Phe Asp Thr Phe Val Glu Lys Phe Cys Asp Asp Ile Asn Ile Asp Asn
 290 295 300
 Cys Asn Leu Arg His Val Lys Tyr Thr Gln Ala Leu Tyr Glu Lys Arg
 305 310 315 320
 Lys Lys Glu Gln Asn Ile Ile Phe Tyr Lys Lys Tyr Lys Glu Leu Phe
 325 330 335
 Gly Lys Asn Lys Leu Asn Leu Lys Asn Gly Asn Asp Ile Asn Asn Arg
 340 345 350
 Lys Lys Ser Leu Arg Cys Met Asn Glu Gly Thr Asn Asn Ile Phe Lys
 355 360 365
 Gly Asn Asp Asp Glu Ile Tyr Asn Asn Asn Tyr Asn Asn Arg Asp Leu
 370 375 380
 Leu Thr Asp Ile Lys Glu Leu Asn Ser Met Ser Glu Ser Asn Gly Tyr
 385 390 395 400
 Asn Glu Lys Glu Glu Asn Phe Leu Glu Gln Leu Ile Lys Leu Arg Tyr
 405 410 415
 Thr Pro Asp Gln Ile Thr Gln Leu Ser Asp Leu Phe Glu Asn Pro Lys
 420 425 430
 Thr Leu Lys Thr Val Asn Val Lys Ile Leu Asn Trp Leu Asn Cys Gln
 435 440 445
 Leu Asn Asn Gly Tyr Trp Leu Glu Arg Phe Ser Leu Phe Leu Leu Gly
 450 455 460
 Leu Thr Ile Ala Ile Gly Val Gly Asn Ile Glu Thr Ile Trp Phe Leu
 465 470 475 480
 Met Ser Thr Trp His Gly Val Ile Phe Ile Val Pro Tyr Ile Leu Cys
 485 490 495
 Tyr Phe Phe Val Cys His Pro Ile Leu Thr Phe Glu Leu Tyr Ile Gly
 500 505 510
 Gln Leu Val Arg Thr Ser Thr Pro Phe Ile Phe Tyr Arg Leu Leu Lys
 515 520 525

Pro Cys Ala Ser Val Gly Phe Leu Met Val Leu Ala Cys Leu Met Asn
 530 535 540

Ser Tyr Ile Asn Ser Tyr Arg Thr Ala Ser Glu Tyr Phe Ile Tyr Leu
 545 550 555 560

Ile Asn Ser Phe Lys Lys Asp Leu Pro Trp Lys Leu Ser Lys Glu Glu
 565 570 575

Ile Lys Phe Cys Thr Asp Phe Lys Asn Asp Phe Val His Cys His Ser
 580 585 590

His Arg Pro Leu Cys Leu Phe Ser Lys Gln Leu Ser Thr Cys Val Pro
 595 600 605

Asn Ser Ile Gly Lys Ala Phe Leu Ile Tyr His Lys Lys Phe Phe Pro
 610 615 620

Asn Asn Asn Leu Tyr Asn Phe Leu Leu Asn Ile Ser Asp His Lys Asn
 625 630 635 640

Tyr Ile Asn Ile Phe Ser Asn Gly Asp Ser Tyr Phe Asp Lys Asp Thr
 645 650 655

Leu Ile Phe Leu Phe Ile Cys Asn Phe Leu Val Thr Ser Phe Gln Leu
 660 665 670

Phe Gly Leu Thr Asn Phe Ala Phe Ser Ala Ala Leu Val Leu Leu Leu
 675 680 685

Ile Gly Phe Leu Ser Ile Thr Gln Phe Ala Thr Met Phe Asn Leu Asn
 690 695 700

Ser Ala Ser Gln Ala Tyr Ser His Val Leu Lys Ser Trp Asn Phe Ser
 705 710 715 720

Tyr Leu Tyr Thr Tyr Ser Ser Ile Trp Ser Gln Cys Val Ser Phe Ala
 725 730 735

Leu Tyr Glu Leu Ser Ile Gly Met Gly Ile Tyr Ser Ser Leu Ala Thr
 740 745 750

Lys Thr Arg Ile Gly Thr Asn Leu Ala Phe Asp Gly Tyr Ala Ile Thr
 755 760 765

Thr Trp Asn Ser Ile Ile Ser Ser Leu Met Phe Phe Ser Ala Ile Ala
 770 775 780

Val Ile Gly Phe Ile Ser Lys Ser Leu Asn Ser Asn Phe Val Asp Ile
 785 790 795 800

Leu Glu Phe Ser Arg Ser Asp Cys Ser Phe Ile Leu Phe Pro Val Gly
 805 810 815

Phe Thr Tyr Leu Lys Lys Met Glu Lys Thr Leu Cys Met Leu Tyr Tyr
 820 825 830

Gly Ser Tyr Ala Val Leu Ser Cys Ala Ser Leu Ala Ile Gln Cys Glu
 835 840 845

Val Ile Val Met Thr Ile Lys Asp Phe Lys Phe Cys Lys Asn Ile Lys
 850 855 860

Lys Arg Asn Ile Ile Leu Leu Leu Ser Ile Leu Phe Phe Ile Ser Ser
 865 870 875 880

Phe Phe Ile Ser Asn Ser Asp Ser Lys His Ile Ile Trp Phe Leu Asn
 885 890 895

Phe Thr Ile Ser Glu Asn Gly Arg Val Phe Val Ser Leu Leu Ile Cys

900 905 910
 Ile Ile Leu Gly Trp Phe Tyr Asn Thr Glu Tyr Gln Phe Lys Asn Leu
 915 920 925
 Thr Thr Lys Ser Val Leu Phe Phe Asn Ile Thr Tyr Trp Val Leu Asn
 930 935 940
 Ile Met Val Ser Ile Thr Phe Asn Tyr Leu Thr Tyr His Val Tyr Val
 945 950 955 960
 Leu Tyr Leu Cys Arg Ile Leu Ile Phe Leu Ile Ser Thr Ile Phe Ala
 965 970 975
 Leu Leu Val Leu Lys Ala Glu Val Tyr Leu Asn Lys Gly Glu Leu Glu
 980 985 990
 Ile Phe Tyr Asn Arg Thr Thr Tyr Lys Val Lys Tyr Ile Gln Lys Lys
 995 1000 1005
 Lys Lys Lys Lys Lys Lys Lys Thr Glu Leu Ile Leu Gly Arg Ile Ala
 1010 1015 1020
 Ile His Ile Ile Leu Thr His Ile Tyr Ile Tyr Ile Tyr Met Tyr Asn
 1025 1030 1035 1040
 Phe Phe Ser Leu Phe Phe Asn Leu Glu Tyr Ile Ile Cys Thr Ile Tyr
 1045 1050 1055
 Trp Lys Tyr Arg Asn Leu Lys Lys Arg Thr Thr Glu Asn Tyr Gln Trp
 1060 1065 1070
 Lys Cys Phe His Arg Lys Tyr Phe Tyr Ser Leu Thr Phe Glu Lys Tyr
 1075 1080 1085
 Cys Ala Tyr Asp Asp His Phe Val Asp Phe Ser Ile Leu Pro Ser Lys
 1090 1095 1100
 Pro Leu Lys Glu Val Gln Asn Phe Asn Ile Leu Ser Tyr Phe Tyr Glu
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 Phe Lys Asn Ile Arg Lys Arg Arg Lys Lys Lys Thr Lys Lys Ile Arg
 1125 1130 1135
 Val Asp

<210> 87
 <211> 568
 <212> PRT
 <213> Plasmodium falciparum

<400> 87
 Met Lys Phe Gly Lys Asn Ile Arg Arg Glu Met His Asn His Ser Gly
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 Met His Tyr Ile Asn Tyr Lys Val Leu Lys Lys Leu Ile Lys Tyr Ile
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 Asn Asn Ser Ile Thr Glu Lys Glu Leu Glu Asn Gly Ile Glu Leu Asn
 35 40 45
 Lys Arg Phe Glu Glu Val Leu Leu His Asp Leu Asn Ile Ile Glu Glu
 50 55 60
 Thr Phe Val Lys Leu Phe Lys Glu Ile Met Asn Ile Lys Lys Glu Ile
 65 70 75 80
 Glu Lys Asn Tyr Ser Thr Val Glu Ile Val Asp Asn Asn Asp Ser Met

Lys Ile Ser Lys Glu Cys Ile Ser Phe Asp Thr Leu Leu Asn Ile Leu
 100 105 110
 Lys Glu Glu Asn Val Ser Lys Glu Phe Phe Asn Phe Cys Val Gln Leu
 115 120 125
 Ser Ile Leu Ser Asn Lys Cys Lys Ile Ile Arg Thr Tyr Val Ile Tyr
 130 135 140
 Asn Tyr Ile Gly Leu Ile Lys Ile Leu Lys Lys Lys Asn Lys His Cys
 145 150 155 160
 Gly Asn Ile Phe Arg Asn Ile Gln Ile Thr Asp Ile Leu Ser Arg Tyr
 165 170 175
 Thr Trp Cys Leu Ser Asp Glu Leu Pro Lys Leu Ile Ser Ser Val Asn
 180 185 190
 Ile Ile Ser Asp Glu Phe Met Gln Lys Tyr Thr Asn Thr Asn Val Thr
 195 200 205
 Ile Glu Lys Tyr Ile Cys Pro Ile Cys Leu Ser Leu Ile His Glu Pro
 210 215 220
 Val Thr Leu Asn Ser Cys Phe His Ser Phe Cys Trp Lys Cys Leu Ala
 225 230 235 240
 Thr Ala Ile Gln Lys Tyr Ser Ile Asp Asn Cys Pro Ser Cys Arg Thr
 245 250 255
 Lys Ile Val Tyr Asp Lys Asn Ser Phe Lys Ile Asp Gly Ile Leu Asn
 260 265 270
 Gln Phe Leu Glu Lys His Phe Leu Ser Ser His Asp Lys Glu Lys Asn
 275 280 285
 Arg Pro Phe Lys Gly Gly His Gln Lys Gly Glu Asn Gly Met Gln Thr
 290 295 300
 Met Asp Thr Glu Ala Phe Lys Arg Glu Asn Ile Lys Arg Tyr Asn Gly
 305 310 315 320
 Gly Gly Glu Asn Ile Asp Arg Tyr Asn Gly Gly Gly Glu Asn Ile Asp
 325 330 335
 Arg Tyr Asn Gly Gly Gly Glu Asn Ile Asp Arg Tyr Asn Ile Glu Gly
 340 345 350
 Glu Asn Ile Asp Arg Tyr Asn Val Glu Gly Glu Asn Ile Asp Arg Tyr
 355 360 365
 Asn Ile Glu Gly Glu Asn Ile Asp Arg Tyr Asn Val Glu Lys Asn His
 370 375 380
 Leu Ile Lys Lys Thr Asn Lys Asn Ile Asn Ile Ser Asn Asn Asn Lys
 385 390 395 400
 Ile Ser Phe Asn Tyr Ser Asn Asn Tyr Val Leu Ser Asn Gln Val Phe
 405 410 415
 Glu Asn Asn Lys Asn Lys Cys Val Met Asn His Asn Ile Tyr Asn Ile
 420 425 430
 Lys Asp Glu Glu Lys Gln Lys Val Arg Gly Ser Thr Tyr Thr Gly Ser
 435 440 445
 Ile Leu Ser Ser Ser Asp Ser Ser Asn Ser Asn Gln Asn Asn Tyr Ile
 450 455 460

Asn Phe Met Tyr Asn Lys Lys Gly Lys Asp Ile Ile Val Pro Met Thr
 465 470 475 480
 Lys Met Ser Ser Arg Leu Arg Glu Tyr Glu Ile Leu Asp Asp Glu Tyr
 485 490 495
 Val Asp Asn Ile Glu Cys Leu Asn Lys Tyr Val Ser Val Leu Asn Thr
 500 505 510
 Asn Asp Val Asn Ile Met Asp Asp Arg Glu Arg Glu Cys Ser Asp Tyr
 515 520 525
 Ser Asp Glu Phe Cys Asn Glu Val Ser Lys Asp Lys Ile Asn Asn Asn
 530 535 540
 Glu Asn Asn Lys Met Arg Gln Glu Asn Asn Tyr Asn Asn Ile Ile Asn
 545 550 555 560
 Asp Val Leu Ser Tyr Thr Phe Asn
 565

<210> 88
 <211> 457
 <212> PRT
 <213> Plasmodium falciparum

<400> 88
 Met Ala Ser Met Asp His Asn Ala Gln Asp Glu Leu Val Asp Tyr Glu
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 Asp Asp Glu Asn Ile Leu Asp Ser Lys Asp Val Lys Gly Asn Leu Gly
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 Asn Asn Ile Leu Asn Asn Asn Asn Lys Gly Gly Ala Met Arg Gly Ser
 35 40 45
 Tyr Ala Thr Val His Thr Gly Gly Phe Lys Asp Phe Phe Leu Lys Pro
 50 55 60
 Glu Leu Leu Arg Ala Ile Ser Glu Ser Gly Phe Glu His Pro Ser Glu
 65 70 75 80
 Val Gln Gln Glu Thr Ile Pro Ala Ala Ile Thr Gly Thr Asp Ile Leu
 85 90 95
 Cys Gln Ala Lys Ser Gly Met Gly Lys Thr Ala Val Phe Val Leu Ser
 100 105 110
 Ile Leu Gln Gln Leu Asp Thr Asn Glu Asn Gln Asp Met Gln Asp Thr
 115 120 125
 Lys Glu Met Asn Asn Asp Asn Asn Asn Asn Gly Asp Asn Lys Phe Val
 130 135 140
 Arg Cys Leu Gly Leu Ala His Thr Arg Glu Leu Ala Tyr Gln Ile Lys
 145 150 155 160
 Asn Glu Phe Asp Arg Phe Ser Lys Tyr Leu Lys Asn Val Arg Cys Glu
 165 170 175
 Val Val Tyr Gly Gly Ile Ser Met Asn Lys His Ile Lys Leu Phe Lys
 180 185 190
 Glu Asp Asn Ile Pro His Ile Ile Ile Gly Thr Pro Gly Arg Ile Leu
 195 200 205
 Ala Leu Ile Arg Glu Lys Tyr Leu Ile Thr Asp Lys Ile Gln His Phe
 210 215 220

Val Leu Asp Glu Cys Asp Lys Cys Leu Glu Lys Leu Asp Met Arg Ser
 225 230 235 240
 Asp Val Gln Lys Ile Phe Ile Ser Thr Pro Leu Lys Lys Gln Val Met
 245 250 255
 Phe Phe Ser Ala Thr Met Ala Lys Glu Met Arg Asp Val Cys Lys Lys
 260 265 270
 Phe Leu Gln Asn Pro Val Glu Ile Phe Ile Asp Asp Glu Ala Lys Leu
 275 280 285
 Lys Leu His Gly Leu Leu Gln His Tyr Val Lys Leu Gln Glu Lys Asp
 290 295 300
 Lys Thr Arg Lys Leu Ile Glu Ile Leu Asp Ala Leu Glu Phe Asn Gln
 305 310 315 320
 Val Ile Ile Phe Val Lys Ser Val Thr Arg Ala Ile Thr Leu Asp Lys
 325 330 335
 Leu Leu Thr Glu Cys Asn Phe Pro Ser Ile Ala Ile His Gly Gly Leu
 340 345 350
 Glu Gln Gln Glu Arg Ile Glu Arg Tyr Asp Lys Phe Lys Lys Phe Glu
 355 360 365
 Asn Arg Ile Leu Val Ser Thr Asp Leu Phe Gly Arg Gly Ile Asp Ile
 370 375 380
 Glu Arg Val Asn Ile Val Ile Asn Tyr Asp Met Pro Glu Asn Ser Asp
 385 390 395 400
 Ser Tyr Leu His Arg Val Gly Arg Ala Gly Arg Phe Gly Thr Lys Gly
 405 410 415
 Leu Ala Val Thr Phe Val Ser Ser Gln Glu Asp Thr Leu Ala Leu Asn
 420 425 430
 Glu Val Gln Thr Arg Phe Glu Val Ala Ile Ser Glu Met Pro Asn Lys
 435 440 445
 Ile Asp Cys Asn Glu Tyr Ile Asn Gln
 450 455

<210> 89

<211> 81

<212> PRT

<213> Plasmodium falciparum

<400> 89

Met Asn Val Lys Ile Pro Glu Phe Leu Thr Asp Glu Asn His Pro Val
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 Gly Tyr Cys Val Asn Gly Ile Gln Thr Phe Val Glu Asp Ser Val Arg
 20 25 30
 Leu Ile Arg Lys Cys Thr Lys Pro Asn Lys Lys Glu Tyr Thr Asn Ile
 35 40 45
 Val Tyr Ala Cys Ser Phe Gly Phe Leu Ile Met Gly Phe Ile Gly Tyr
 50 55 60
 Ile Ile Lys Leu Val Phe Ile Pro Ile Asn Asn Ile Phe Val Gly Ser
 65 70 75 80

Tyr

<210> 90
 <211> 96
 <212> PRT
 <213> Plasmodium falciparum

<400> 90
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 1 5 10 15
 Arg Tyr Gly Ser Ser Leu Arg Lys Gln Ile Lys Lys Ile Glu Leu Met
 20 25 30
 Gln His Ala Lys Tyr Leu Cys Thr Phe Cys Gly Lys Thr Ala Thr Lys
 35 40 45
 Arg Thr Cys Val Gly Ile Trp Lys Cys Lys Lys Cys Lys Arg Lys Val
 50 55 60
 Cys Gly Gly Ala Trp Ser Leu Thr Thr Pro Ala Ala Val Ala Ala Lys
 65 70 75 80
 Ser Thr Ile Ile Arg Leu Arg Lys Gln Lys Glu Glu Ala Gln Lys Ser
 85 90 95

<210> 91
 <211> 2573
 <212> PRT
 <213> Plasmodium falciparum

<400> 91
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 20 25 30
 Val Asp Ala Glu Glu Asp Glu Asp Asn Asn Asn Asn Asn Asn Asn
 35 40 45
 Asn Asn Asn Ser Asn Ile Ser Asn His Met Asn Glu Phe Asp Leu Glu
 50 55 60
 Glu Glu Asp Glu Asp Asp Tyr Glu Asp Glu Asn Tyr Ile Val Gly Glu
 65 70 75 80
 Thr Ile Glu Ile Asp Glu Ser Lys Leu Lys Asn Glu Lys Ile Glu Glu
 85 90 95
 Asp Ile Phe Asn Glu Asn Asn Leu Leu His Gly Ile Lys Thr Arg Glu
 100 105 110
 Leu Leu Glu Gln Glu Ile Leu Ile Leu Phe Ser Asn Met Leu Lys Lys
 115 120 125
 Glu Thr Ile Leu Cys Lys Asp Ile Lys Ser Gly Ser Asn Asp Pro Met
 130 135 140
 Asp Glu Ile Ser Leu Phe Lys Asp Asp Met Val Asp Asp Lys Glu Leu
 145 150 155 160
 Lys Asp Phe Glu Lys Ser Ser Leu Lys Ile Lys Asn Lys Glu Val Tyr
 165 170 175
 Asn Phe Ile Tyr Asn Lys Met Asn Leu His Ile Lys Glu Asn Lys Lys

180							185							190						
Lys	Asp	Glu	Lys	Glu	Lys	Lys	Asn	Lys	Ile	His	Asn	Asn	Asp	Glu	Asn					
		195					200					205								
Asn	Asn	Met	Ile	Tyr	Tyr	Lys	Asn	Ile	Asp	Lys	Thr	His	Tyr	Ile	Leu					
		210				215					220									
Asp	Asn	Asn	Val	Val	His	Ile	Leu	Asn	Asp	Ile	Asn	Thr	Tyr	Leu	Lys					
					230					235				240						
Arg	Glu	Arg	Asp	Tyr	Met	Asn	Arg	Lys	Phe	Gly	Thr	Tyr	Ile	Asp	Ser					
				245					250					255						
Thr	Tyr	Lys	Asn	Pro	Met	Tyr	Val	Thr	Leu	Tyr	Ile	Phe	Asn	Asn	Asp					
			260					265					270							
Ile	Leu	Lys	Asp	Ile	Ile	Leu	Gln	Val	Ile	Asp	Ile	Ile	Arg	Asn	Asp					
		275					280					285								
Phe	Asp	His	Ala	Ile	Tyr	Lys	Asp	Ile	Asp	Glu	Asn	Gln	Leu	Ile	Lys					
		290				295					300									
Asn	Leu	Ile	Ile	Leu	Ile	Asn	His	Leu	Thr	Thr	Arg	Pro	Ser	Lys	Glu					
					310					315				320						
Trp	Phe	Asp	Tyr	Trp	Lys	Arg	His	Met	Pro	Thr	Phe	Asn	Asp	Lys	Lys					
				325					330					335						
Ser	Glu	Tyr	Asn	Val	Tyr	Lys	Tyr	Leu	Gln	Leu	Gln	Lys	Ser	Asp	Arg					
			340					345					350							
Arg	Ile	Leu	Tyr	Asp	Thr	Leu	Lys	Asn	Asp	Ile	Tyr	Ile	Lys	Glu	Leu					
		355						360				365								
Gln	Lys	Arg	Ser	Asp	Ile	Leu	Asp	Gln	Tyr	Gln	Lys	Gly	Leu	Gln	Ser					
		370				375					380									
Leu	Lys	Cys	Leu	Leu	Ala	Asn	Lys	Asn	Phe	Leu	Thr	Met	Leu	Asn	Glu					
					390					395				400						
Phe	Arg	Tyr	Asn	Thr	Gln	Leu	Phe	Ile	Asp	Ala	Asp	Tyr	Arg	Glu	Ile					
				405					410					415						
Glu	Glu	Asn	Glu	Lys	Val	Met	Glu	Met	Gln	Arg	Arg	Glu	Asn	Glu	Leu					
			420					425					430							
Leu	Glu	Glu	Lys	Lys	Arg	Leu	Lys	Gln	Glu	Leu	Glu	Ser	Tyr	His	Asp					
		435					440					445								
Asp	Ser	Ser	Thr	Asp	Asp	Asp	Ser	Ser	Ala	Asp	Glu	Gln	Gln	Asp	Glu					
						455					460									
Arg	Arg	Glu	Val	Leu	Thr	His	Asn	Asp	Pro	Ile	Asn	Lys	Lys	Asp	Asp					
					470					475				480						
Pro	Ile	Asn	Lys	Asn	Asp	Asp	Pro	Ile	Asn	Lys	Asn	Asp	Asp	Pro	Ile					
				485					490					495						
Asn	Lys	Asn	Asp	Asp	Asn	Ile	Asn	Lys	Asn	Asp	Asp	Asn	Ile	Asn	Lys					
			500					505					510							
Asn	Asp	Asp	Asn	Ile	Cys	Asn	Ser	Asn	Asp	His	Thr	His	Asn	Ser	Asn					
						520						525								

Phe Ser Asn Asp His Thr His Phe Ser Asn Asp His Thr His Phe Ser
 565 570 575
 Asn Asp His Thr His Asn Ser Asn Asp His Thr His Asn Ser Lys Asn
 580 585 590
 His Ala His Phe Ser Asn Glu Val Asp Lys Thr Asn Asp Tyr Lys Tyr
 595 600 605
 His Ser Glu Lys Lys Lys Lys Asn Asn Val Ile Arg Ser Lys Met Tyr
 610 615 620
 Asn Ile Lys Lys Arg Ile Ser Lys Ile Asn Asp Glu Leu His Glu Leu
 625 630 635 640
 Ser Asn Phe Phe Leu Ile Asp Lys Thr Lys Arg Glu Lys Leu Met Phe
 645 650 655
 Glu Tyr Asn Glu Asn Val Phe Leu Val Arg Asn Ile Leu Thr Gln Val
 660 665 670
 Leu Gly Ile Arg Asn Lys Thr Asp Asn Arg Asp Ile Asn Leu Asn Asn
 675 680 685
 Val His Tyr Ala Ile Leu Gln Asn Ile Leu Asp Lys His Gly Cys Leu
 690 695 700
 His Leu Ile Ile Asp Glu Met Arg Asp Leu Phe Glu Lys Glu Ile Lys
 705 710 715 720
 Lys Tyr Glu Glu Glu Ser Asn Ile Tyr Ile Pro Tyr Ile Lys Gln Asn
 725 730 735
 Thr Met Lys Gln Ile Trp Glu Tyr Ile Arg Leu Phe Tyr Asn Ile Ile
 740 745 750
 Cys Tyr Ile Asp Pro Ile Asp Leu Val Lys Ser Leu Thr Tyr Gln Lys
 755 760 765
 Ser Thr His Ile Ile Lys Lys Glu Lys Lys Lys Thr Lys Thr Asp Met
 770 775 780
 Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asp Asn Asn Asn
 785 790 795 800
 Ile Met Met Asn Gln Lys Phe Leu Asn Asn Tyr His Asn Lys Lys His
 805 810 815
 Leu Asn Thr Ser Asp Asn Val Asn Asn Met Lys Thr Asn Asn Leu Arg
 820 825 830
 Asn Tyr Asn Lys Asp Ile Asn Leu Lys Asn Val Gly Lys Asp Met Asn
 835 840 845
 Lys Arg Lys Ser Met Ala Gln Gln Gln Asn Lys Arg Lys Ser Asn Tyr
 850 855 860
 Ile Asn Ile Lys Gln Lys Asn Leu Met Ile Thr His Leu Ser Arg Ile
 865 870 875 880
 Asn Pro Leu Leu Ala Lys Ser Lys Val Arg Lys Pro Asn Glu Glu Lys
 885 890 895
 His Leu Lys Lys Arg Lys Arg Lys Phe Ile Glu Arg Lys Asn Leu Ile
 900 905 910
 Asp His Tyr Glu Ile Phe Ser Phe Glu Asp Phe Ser Phe Asn Met Phe
 915 920 925

Ser Glu Asp Arg Leu Phe Asn Lys Tyr Asn Ile Leu Asp Ile Phe¹¹⁸⁸ Asp
 930 935 940
 Tyr Ser Asn Leu Tyr Lys Ile Gln Asp Phe Leu Asn Asn Ile Ile Gly
 945 950 955 960
 Ile Asn Glu Glu Phe Glu Ser Ile Tyr Glu Asn Asp Asp Asn Phe His
 965 970 975
 Tyr Ser Leu Lys Val Phe Leu Asn Ile Cys Ile Lys Asp Leu Arg Arg
 980 985 990
 Cys Ile Asn Glu Phe Tyr Asn Phe Gln Trp Asp Ile Lys Ile Ile Leu
 995 1000 1005
 Asn Met His Ala Trp Ile Val Thr Tyr Tyr Thr Asn Leu Tyr Ile Tyr
 1010 1015 1020
 Glu Asn Arg Lys Arg Phe Tyr Asn Ser Arg Asn Lys Asn Lys Asn Asn
 1025 1030 1035 1040
 Lys Glu His Gln Met Asn Arg Asp Asp Glu Arg Lys Cys Thr Lys Glu
 1045 1050 1055
 Tyr Thr Asn Gln Asn Glu Gly Glu Met Lys Tyr Asp His Asn Arg Lys
 1060 1065 1070
 Arg Glu Asp Glu Gln Lys Asn His Lys Tyr Cys Asn Ile Asn Cys Asn
 1075 1080 1085
 Ile Asn Cys Asn Ile Asn Cys Asn Lys Asn Cys Asn Lys Asn Cys Asn
 1090 1095 1100
 Ile Asn Tyr Asn Asn Gly Asp Asn Asn Val Tyr Asp Asn Asn Val Tyr
 1105 1110 1115 1120
 Asp Asn Asn Asp Asp Tyr Asn Asp Asp Tyr Asn Asp Asp Tyr Asn Asp
 1125 1130 1135
 Asp Tyr Asn Asp Asp Tyr Asn Asp Val Asn Gln Asn Thr Tyr Val Lys
 1140 1145 1150
 His Asn Asn Gln Asn Glu Asn Ser Ser Leu Phe Ile Ser Arg Ile Gln
 1155 1160 1165
 Met Val Leu Gly Leu Gln Met Tyr Ile Gly Asp Asn Ser Ile His Ser
 1170 1175 1180
 Glu Phe Leu Cys Asp Thr Phe Gln Arg Val Ile Arg Glu Glu Lys Met
 1185 1190 1195 1200
 Met Lys Asn Ser Ser Gln Val Ile Leu Cys Cys Leu Arg Cys Leu Tyr
 1205 1210 1215
 Ser Asp Leu Asn Leu Leu Asp Ile His Ser Leu Ser Thr Asp Glu Asn
 1220 1225 1230
 Val Lys Ser Ile Cys Lys Thr Ser Leu Asp Asn Leu Leu Lys Arg Asn
 1235 1240 1245
 Ile Leu Thr Thr Leu Ser Trp Ile Leu Gln Asn Phe Lys Ile Leu Ser
 1250 1255 1260
 His Glu Lys His Ile Phe Ile Tyr Ser Leu Lys Cys Ser Leu Leu Ile
 1265 1270 1275 1280
 Ile Asn Leu Leu Ala Lys Leu Gly Gly Thr Thr Tyr Ile Ile Lys Glu
 1285 1290 1295
 Lys Lys Asn Ile His Asn Asp Ser His Asp Asp Asn Asn Asp Asp Ser

1300										1305					1310				
Val	Asn	Asp	Ser	Asn	Asp	Asp	Thr	Asn	Asn	Val	Asn	Val	Asn	Val	Asn				
1315										1320					1325				
Val	Asn	Asp	Tyr	Tyr	Asp	Asp	Asp	Asp	Asp	Asp	Asn	Asn	Asn	Asn	Asn				
1330										1335					1340				
Arg	Ile	Asp	Lys	Lys	Lys	Lys	His	Lys	Lys	Lys	Lys	Tyr	Asn	Asn	Glu				
1345										1350					1355				
Pro	Met	Glu	Lys	Ile	Asp	Val	Ser	Asp	Leu	Val	Glu	Glu	Ile	Phe	Asn				
1365										1370					1375				
Gly	Lys	Ile	Val	Asn	Ile	Cys	Met	His	Ile	Leu	Glu	Asn	Phe	Lys	Arg				
1380										1385					1390				
Asn	Ser	Leu	Tyr	Ile	Asn	Asp	Leu	Ile	Ile	Thr	Tyr	Phe	Glu	His	Leu				
1395										1400					1405				
Ile	Lys	His	Lys	Asn	Asn	Glu	Tyr	Asn	Phe	Leu	Ile	Phe	Phe	Asp	Ile				
1410										1415					1420				
Lys	Tyr	Phe	Leu	Ile	Phe	Lys	Asp	Ile	Ile	Asn	Asp	Pro	Glu	Ala	Tyr				
1425										1430					1435				
Asn	Asn	Pro	His	Tyr	Tyr	Trp	Ile	Pro	Cys	Phe	Phe	Glu	Asn	Ile	Ile				
1445										1450					1455				
Ala	Cys	Phe	Phe	Lys	Ile	Trp	Lys	Ser	Asn	Tyr	Phe	Ile	Val	Asn	Glu				
1460										1465					1470				
Leu	Leu	Phe	Thr	Lys	Asp	Ile	Asn	Lys	Asn	Asn	Ser	Asn	Leu	Leu	Asn				
1475										1480					1485				
Glu	Lys	Tyr	Leu	Leu	Ser	Ile	Phe	Ser	Asn	Tyr	Asn	Glu	Gly	Asn	Asp				
1490										1495					1500				
Pro	Phe	Ile	Phe	Gln	Gln	Leu	Asn	Glu	Gly	Ile	Tyr	Ile	Asn	Asp	Ile				
1505										1510					1515				
Phe	Ile	Asn	Leu	Asn	Asn	Lys	Lys	Arg	Leu	Glu	Ser	Leu	Glu	Trp	Ser				
1525										1530					1535				
Asn	Glu	Asp	Ile	Glu	Asn	Leu	Lys	Phe	Tyr	Phe	Lys	Gln	Phe	Lys	His				
1540										1545					1550				
Met	His	Asn	Phe	Leu	Pro	Phe	Ile	Ser	Glu	Met	Leu	Asn	Lys	Ser	Ser				
1555										1560					1565				
Asn	Val	Val	Lys	Asn	Gln	Leu	Ile	Tyr	Leu	Asn	Tyr	Leu	Asp	Lys	Arg				
1570										1575					1580				
Gly	Lys	Val	Ile	Tyr	Asp	Asp	Gln	Tyr	Glu	Ser	Asp	Asn	Met	Ile	Ser				
1585										1590					1595				
Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Leu	Ser			
1605										1610					1615				
Ser	Ser	Ser	Ser	Leu	Ser	Cys	Val	Ser	Tyr	Leu	Ser	Glu	Ala	Gln	Asn				
1620										1625					1630				
Ser	Asn	Asn	Lys	Ser	Asn	Asp	Ser	Leu	Lys	Met	Ser	Tyr	Ser	Lys	Lys				
1635										1640					1645				
Lys	Lys	Gln	His	Thr	Asn	Glu	His	Met	Asn	His	His	Gln	Asn	Tyr	Pro				
1650										1655					1660				
Met	Arg	Lys	Thr	Lys	Gln	Pro	Leu	Leu	Tyr	Ile	Ile	Tyr	Lys	Leu	Lys				
1665										1670					1675				

Lys Leu Asn Tyr Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 1685 1690 1695
 Asn Asp Asp Asn Thr Lys Asp Gln Pro Lys Leu Thr Val Asn Glu Ile
 1700 1705 1710
 Asn Cys Asn Val Asp Thr Val Leu Glu Glu Ile Asn Val Asn Leu Lys
 1715 1720 1725
 Ser Leu Tyr Glu Leu Lys Lys Leu Ser Lys Asn Lys Ile Phe Asn Asn
 1730 1735 1740
 Lys Ala Leu Ala Phe Asp Ile Pro Leu Ser Ile Ser Pro Asp Leu Leu
 1745 1750 1755 1760
 Glu His His Tyr Phe Lys Lys Leu Leu Lys His Ile Gly Phe Leu Tyr
 1765 1770 1775
 Asn Gln Asn Val Asp Glu Trp Ile Leu Asn Glu Asn Leu Asp Ile Asp
 1780 1785 1790
 Ile Phe Lys Lys Thr Ile Asp Lys Phe Glu Gln Leu Tyr Ile Met Asp
 1795 1800 1805
 Ile Gln Lys Leu Lys Lys Lys Lys Leu Ser Ser His Lys Leu Asn Val Gln
 1810 1815 1820
 Thr Asn Asp Gln Gly Glu Arg Gln Asp Glu Arg Asn Ile Asp His Glu
 1825 1830 1835 1840
 Asp Glu Pro Val Ser Ser Asn Thr Glu Asp Asp His Glu Glu Asn Asp
 1845 1850 1855
 Tyr Phe Thr Tyr Asp His Ile Asp Glu Arg Asp His Lys Lys Cys Asp
 1860 1865 1870
 Asp Lys Lys Tyr Ser Asp Asn Thr Asn Glu Thr Tyr Asp Asp Gln Lys
 1875 1880 1885
 Cys Asp Asp Asn Thr Asn Glu Thr Tyr Asp Asn Glu Lys Cys Asp Glu
 1890 1895 1900
 Ala Ile Asn Asn Lys His Met Asp Glu Gln Glu Leu His Leu Arg Ser
 1905 1910 1915 1920
 Pro Ser Ile Lys Thr Lys Gly Thr Leu Lys Leu Leu Lys Leu Met Tyr
 1925 1930 1935
 Glu Phe Phe Ile Ser Asn Asp Asp Glu Cys Arg Leu Phe Phe Asn Asn
 1940 1945 1950
 Leu Ile Asn Thr Ile Lys Glu Lys Cys Ile Ile Ile Phe Glu Lys Leu
 1955 1960 1965
 Lys Lys Cys Lys Leu Asp His Asp Ile Leu Tyr Lys Asp Thr Thr Asn
 1970 1975 1980
 Asn Tyr Tyr Asp His Thr Ser His Pro Val Gln Ile Cys Phe Glu Asp
 1985 1990 1995 2000
 Tyr Lys Ile Tyr Leu Asn Asn Asn Glu Lys Ser Ile Leu Lys Gly Arg
 2005 2010 2015
 Cys Lys His Lys Asn Ile Leu Glu Glu Leu Leu Glu Ile Leu Gly Leu
 2020 2025 2030
 Tyr Ile Ser Asn Val Pro Cys Leu Ile Ile Ser Lys His Ile Lys Glu
 2035 2040 2045

Glu Glu Phe Tyr Glu Arg Ile Thr Thr Ile Asn Asp His Lys Thr Leu
 2050 2055 2060
 Ser Leu Asn Asp Leu Asn Met Ile Ile Thr Thr Lys Glu Lys Glu Ile
 2065 2070 2075 2080
 Lys Glu Lys Lys Lys Lys Lys Lys Glu Glu Arg Lys Pro Ser Ala His
 2085 2090 2095
 Gln Lys Phe Ala Phe Ile Lys Ser Ile Cys Glu Tyr Leu Asn Tyr Asn
 2100 2105 2110
 Tyr Ile Ile Arg Asn Thr Tyr Lys Ser Glu Gln Asn Thr Asn Asn His
 2115 2120 2125
 Asn Asp Asn Asn Ile Ile Tyr Asn Asn Thr Tyr Ser Lys Leu Lys Asp
 2130 2135 2140
 Thr Tyr Phe Gly Asp Asp Lys Leu Leu Thr Ala Leu Tyr Asp Lys Leu
 2145 2150 2155 2160
 Asn Ile Trp Asn Asn Arg Arg Lys Lys Lys Asn Asp Asp Met Val Leu
 2165 2170 2175
 Glu Ile Pro Ile Pro Gln Phe Val Gly Ser Met Cys Asn Val Gly Thr
 2180 2185 2190
 Ser Glu Gly Glu His Glu Gln Lys Leu Asp Glu Ser Lys Asn Ile Tyr
 2195 2200 2205
 Thr Lys Glu Tyr Asn Asn Asp Glu Lys Phe Leu Lys Ser His Ile Asn
 2210 2215 2220
 Cys Gln Asp Asp Thr Gln Lys Ile Ser Ser Leu Val Ile His Ile Gly
 2225 2230 2235 2240
 Ile Cys Leu Lys Gly Glu Tyr His Asp Glu Ser Ile Leu Lys Trp Thr
 2245 2250 2255
 Cys Glu Gln Ile His Arg Glu Trp Met Lys Ile Met Leu Lys Leu Phe
 2260 2265 2270
 Tyr Asn Ile Leu Tyr Asp Thr Thr Tyr Asn Val Ile Gly Lys Leu Phe
 2275 2280 2285
 Lys Glu Tyr Lys Asn Ile Lys Glu Ile Leu Asn Asp Gln Ser Ser Asp
 2290 2295 2300
 Phe Leu Asp Met Tyr Lys Ser Asp Lys Lys Lys Lys Lys Lys Lys
 2305 2310 2315 2320
 Glu Leu Asp Asp Val Glu Lys Glu Gly Gln Pro Lys Met Gly Val Gly
 2325 2330 2335
 Asn Asp Asp Asn Ile Asn Gly Asp Lys Asn Ile Tyr Asp Asp Asn Ile
 2340 2345 2350
 Asn Gly Asp Asp Asn Ile Asn Gly Asp Lys Asn Ile Tyr Asp Asp Asp
 2355 2360 2365
 Lys Asn Ile Tyr Asp Asp Asp Asp Asn Ile Asn Gly Asp Lys Asn Ile
 2370 2375 2380
 Tyr Asp Gly Asn Tyr Lys Ile Ser Tyr Ser Lys Glu Tyr Glu His Ile
 2385 2390 2395 2400
 His Met Asp Glu Lys Lys Glu Val Glu Lys Glu Tyr His Ile Tyr Asp
 2405 2410 2415
 Asn Asn Asn Asn Asn Asp Asn Asn Asn Asp Asn Asn Asn Asp Asn Asn

2420 2425 2430
 Asn Asn Ser His Thr Leu Ala Phe Gln Asn Arg Thr Gln Gly Glu Thr
 2435 2440 2445
 Thr Phe Thr Asn Ile Asn Asn Ile Thr Asn Asp Ile Cys Glu Lys Gly
 2450 2455 2460
 Asn Lys Tyr Thr Ser Asn Val Asn Asn Ile Asn Asn Ile Asn Glu Met
 2465 2470 2475 2480
 Thr Cys Lys Glu Ser Val Glu Val Asn Glu Ile Ile Gln Lys Thr Asn
 2485 2490 2495
 Lys Arg Lys Phe His Asn Ile Glu Leu Lys Glu His Tyr Cys Tyr Asp
 2500 2505 2510
 Leu Phe Lys Lys Arg Lys Leu Glu Asn Thr Tyr Arg Asn Thr Tyr Lys
 2515 2520 2525
 Lys Asn Arg Lys Ile Ile Ile Asn Cys Leu Leu Thr Asn Lys Asn Ile
 2530 2535 2540
 Phe Gln Tyr Lys Glu His Asp Ile Val Asn Lys Val Lys Gln Ile Phe
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 2565 2570

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 35 40 45
 Ser Asp Val Lys Tyr Lys Asp Ser Ser Trp Ile Tyr Val Leu Thr Leu
 50 55 60
 Leu Phe Gln Cys Phe Phe Gly Phe Phe Gly Gly Ile Leu Asn Gln Asn
 65 70 75 80
 Leu Gly Pro Gln Ile Ser Val Leu Leu Gly Gly Trp Leu Met Cys Leu
 85 90 95
 Gly Ile Leu Leu Ser Tyr Phe Thr Val Phe Asn Phe Tyr Leu Phe Leu
 100 105 110
 Met Thr Tyr Gly Ile Leu Cys Gly Ile Gly Cys Gly Ile Ala Tyr Pro
 115 120 125
 Ile Pro Leu Ser Val Ala Val Lys Lys His Tyr Asp Tyr Lys Gly Val
 130 135 140
 Ile Ser Gly Ile Ile Phe Ile Gly Arg Gly Leu Ser Val Phe Ile Ile
 145 150 155 160
 Cys Pro Leu Gln Asn Tyr Tyr Ile Asn Lys Tyr Asn Tyr Met Pro Asp
 165 170 175
 Tyr Met Pro Glu Ile Glu Asn Ser Asp Glu Lys Tyr Phe Ser Asn Leu

180 185 190
 Asp Ile Leu Asn Lys Val Pro Tyr Leu Phe Ile Tyr Glu Gly Ile Cys
 195 200 205
 Phe Ala Ile Ile Gln Phe Leu Gly Ser Tyr Leu Ile Ala Asp Ser Gly
 210 215 220
 Asp Thr Ser Lys Asp Phe Met Ala Tyr Asn Asp Arg Asn Asn Lys Val
 225 230 235 240
 Leu Tyr Phe Glu Glu Lys Asn Phe Ile Asn Lys Pro Asn Gly Leu Ser
 245 250 255
 Asn Ser Leu Arg Thr Leu Ser Asn Thr Ser Asn Phe Ser Phe Arg Glu
 260 265 270
 Val Asn Asn Thr Phe Ile Asn Arg Glu Phe Ile Leu Ile Trp Leu Met
 275 280 285
 Ile Phe Phe Asn Trp Gln Ala Ile Ser Tyr Thr Gln Val Phe Trp Lys
 290 295 300
 Ile Phe Gly Met Asn Tyr Leu Ser Ile Asp Asp Arg Ser Leu Ser Leu
 305 310 315 320
 Leu Gly Ser Val Ser Ser Leu Phe Asn Ile Phe Gly Arg Ile Phe Trp
 325 330 335
 Gly Leu Ile Ser Asp Phe Thr Ser Phe Lys Thr Thr Leu Ile Leu Met
 340 345 350
 Ser Leu Leu Met Ser Phe Leu Thr Ile Thr Leu Thr Met Ser Gly Phe
 355 360 365
 Tyr Gly Ile Ile Thr Tyr Ser Ile Trp Val Cys Leu Ile Phe Phe Cys
 370 375 380
 His Ala Gly Thr Phe Ala Ile Phe Pro Ser Ile Thr Ala His Thr Phe
 385 390 395 400
 Gly Thr Lys Asn Phe Gly Pro Val Phe Gly Leu Leu Phe Thr Ala Arg
 405 410 415
 Ala Phe Ser Ser Ile Ile Asn Ala Ile Ile Ser Ala Val Leu Leu Asn
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 Val Ser Ile Met Leu Ala Leu Ala Phe
 450 455

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 <211> 1346
 <212> PRT
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 Ser Phe Asn Asn Asn Gly Cys Asn Asn Gln Phe Ile Lys Lys Leu His
 35 40 45
 Phe Tyr His Thr Tyr Val Pro Thr Phe Tyr Ser Tyr Leu Lys Lys Leu

50

55

60

Glu Ile Lys Lys Lys Cys His Ile Tyr Asn Glu Asn Asn Asn Ile Val
 65 70 75 80
 Ile Tyr Lys Arg Leu Ile Cys Ile His Lys Asn Lys Lys Glu Tyr His
 85 90 95
 Val Asn Ile Asn Glu Val Pro Ile Asn Asn Glu Asp Gly Lys Asp Asn
 100 105 110
 Lys Val Asn Ile Lys Glu Asn Asn Lys Met Tyr Arg Asn Ser Lys Asp
 115 120 125
 His Ile His Lys Lys Lys Asn His Val Lys Ile Asn Tyr Asn Lys Ile
 130 135 140
 Leu Ile Gln Thr Asn Glu Gln His Lys Lys Ser Lys Ile Glu Asp Lys
 145 150 155 160
 Trp Asn Glu Asn Ser His Val Arg Glu Asp Glu Ile Tyr Leu His Val
 165 170 175
 Asn Asn Leu Cys Lys Lys Ile Tyr Tyr Leu Ser Lys Asn Lys Ile Lys
 180 185 190
 Asp Glu Asn Leu Trp Lys His Tyr Leu Ile Gln Tyr Tyr Lys Glu Asn
 195 200 205
 Lys Asn Tyr Asp His Ile Lys Ile Lys Asn Ile Phe Met Leu Leu Leu
 210 215 220
 Gly Ile Thr Asn Ser Asn Lys His Ile Lys Asp Met Ile Ile Val Ile
 225 230 235 240
 Asn Asp Glu Glu Lys Ile Asn Glu Lys Gly Lys Lys Lys Lys Asn Ile
 245 250 255
 Lys Ile Ile Glu Ile Val Tyr Asn His Leu Asp Ile Leu Ser Lys Lys
 260 265 270
 Ile Asn Gln Met Thr Asn Asn Gln Leu Ser Ile Phe Leu Tyr Ile Leu
 275 280 285
 Glu Lys Trp Asn Met Ile Asp Asn Tyr Lys Asp Ile Thr Asn Glu Ile
 290 295 300
 Asn Phe Lys Ile Leu Asn Gln Thr Ser Leu Lys Lys Val Asn Ile Lys
 305 310 315 320
 Cys Phe Leu Asn Val Leu Tyr Ile Tyr Ser Lys Asn Tyr Glu Gln Asn
 325 330 335
 Val Asn Lys Asn Asn Asn Asn Glu Asn Lys Asn Asn Lys Asn Asn Asn
 340 345 350
 Ser Asn Asn Asn Asn Asn Ile Cys Lys Glu Gln Lys Cys Val Ile Thr
 355 360 365
 Lys Asp Lys Ile Lys Ile Phe Ile Asn Lys Phe Gly Lys Gln Lys Phe
 370 375 380
 Arg Ile Glu Asp Ile Leu Tyr Leu Leu Ser Ser Met Tyr Lys Leu Lys
 385 390 395 400
 Ile Lys Asn Lys Ser Ile Leu Asn Asn Ile Ile Gln Tyr Leu Asn Ile
 405 410 415
 Gln Asn Val Ile Lys Asp Ser Asn Tyr Phe Leu Ile Pro Ser Leu Leu
 420 425 430

Leu Ser Leu Ala Asn Leu Asn Ile Tyr Asp Gln Gln Leu Tyr Leu Asn
 435 440 445
 Phe Lys Asn Val Ile Met Glu Asn Tyr Tyr Phe Tyr Asn Ser Ile His
 450 455 460
 Phe Thr Asn Leu Phe Tyr Ser Phe Ala Lys Phe Lys Pro Asp Tyr Val
 465 470 475 480
 Gln Glu Leu Phe Glu Lys Ile Ala Thr His Ile Met Met His Thr Asn
 485 490 495
 Asn Ser Ser Thr Asp Asn Asn Lys Ser Thr Pro Glu Thr Gln Ile Ile
 500 505 510
 Leu Lys Gly Lys Glu Lys Glu Ile Asn Asn Asn Pro Asn Leu Lys Asn
 515 520 525
 His Lys Asn Asn Asp Phe Phe Glu Asn Asp Asp Lys Tyr Thr Ile Asn
 530 535 540
 Asn Lys Met Val Asp Gln Thr Asn Asn Asn Thr Phe Asn Ile Phe Gln
 545 550 555 560
 Ile Thr Asn Ile Ile Asn Ser Cys Leu Lys Cys Asn Tyr Val Asn Tyr
 565 570 575
 Asp Phe Phe Ser Tyr Leu Leu Lys Gln Gly Asn Leu Phe Met Asp Asn
 580 585 590
 Ser Glu Pro Leu Asp Asn Leu Ile Asn Val Leu Asn Cys Val Ser Asn
 595 600 605
 Ile Leu Lys His Phe Asn Val Phe Lys Tyr Lys Leu Tyr Phe His Tyr
 610 615 620
 Glu Lys Lys Glu Lys Asn Gln Trp Gln Gln Glu Asn Trp Leu Val His
 625 630 635 640
 Asn Asp Leu Thr Cys Ser Gly Lys Asn His Glu Asn Ser Arg Asn Lys
 645 650 655
 Ile Ala Asn Trp Gln Asn Lys Ile Glu His Asn Asn Leu Asp Asn Lys
 660 665 670
 Asn Asn Asn Met Asp Phe Asn Asn Met Met Thr Ser Pro Leu Tyr Tyr
 675 680 685
 Tyr Tyr Tyr Tyr Tyr Tyr Asp Asn Asp Pro Ser Lys Gly Tyr Cys Asn
 690 695 700
 Leu Phe Glu Ile Leu Tyr Gly Tyr Asn Ser Gly Tyr Asn Leu Tyr Thr
 705 710 715 720
 Ser Phe Ser Ser Leu Ser Tyr Val Val Lys Tyr Asn Glu Gln Met Phe
 725 730 735
 Leu Lys Lys Phe Lys Asp Ser Lys Gln Ser Glu Val Pro His Asn Phe
 740 745 750
 Glu Ile His Leu Asp Asn Ile Ser Asp Lys Ile Leu Lys Ile Ile Glu
 755 760 765
 Gln Asn Leu Asn His Glu Asn Met Lys Tyr Ile Ile His Asn Leu Met
 770 775 780
 Ile Ser Leu Ser Leu Cys Asp Ile Lys Tyr Leu Asn Leu Tyr Ala Leu
 785 790 795 800

Cys Phe Phe Ile Leu Lys Glu Asn Tyr Tyr Tyr Leu Ser Ile Asp Asn
 805 810 815
 Leu Tyr Leu Tyr Leu Glu Ile Leu His Arg Met Lys Ile Tyr Asn His
 820 825 830
 Asp Ile Phe Tyr Ser Ile Met Glu Tyr Ile Asn Thr His Val His Ala
 835 840 845
 Leu Glu Ser Gln Lys Lys Met Lys Ile Phe Leu Leu Ser Tyr Asn Ile
 850 855 860
 Phe Gln Lys Met Asp Asn Pro Val Asp Met Lys Glu Met Cys Asp Phe
 865 870 875 880
 Phe Leu Ser Ser Asn Asn Lys Ile Glu Lys Glu Asn Gly Asn Asp Asp
 885 890 895
 Leu Met Leu Gly Lys Cys Thr His Glu Lys Asn Leu Trp Lys Leu Pro
 900 905 910
 Thr Asp Ile Glu Ile Lys Gln Asn Leu Ile Asn Leu Glu Asn Phe Gln
 915 920 925
 Lys Glu Leu Leu Ser Asn Asn Asp Asn Asp Lys Met Glu Phe His Asp
 930 935 940
 Asn Asn Cys Asn Ile Ile Gly His Asp Lys Phe Phe Ser Asn Asn Asp
 945 950 955 960
 Glu Asn Lys Ile Lys Lys Glu Lys Tyr Phe Asn Leu Lys Asn Glu Ile
 965 970 975
 Met Val Phe Lys Lys Ile Glu Lys Thr Glu Thr Leu Pro Cys Thr Leu
 980 985 990
 Asn Ile Tyr Asp Tyr Ile Asn Phe Leu Leu Ile Leu Ile Phe Tyr Gln
 995 1000 1005
 Cys Asn Asn Lys Ile Lys Glu Cys Asp Glu Lys Ile Asn Leu Asn Phe
 1010 1015 1020
 Leu Phe Ser Lys Asp Glu Asn Val Ile Ile Thr Ile Gln Asn Glu Met
 1025 1030 1035 1040
 Tyr Glu Lys Asn Asn Lys Ile Lys Asn Pro Cys Lys Tyr Val Lys Asn
 1045 1050 1055
 Lys Gln Tyr Met Leu Asp Lys Tyr Ser Glu Met Leu Lys Glu Asn Leu
 1060 1065 1070
 Phe Asn Ile Glu Ser Ser Leu Ile Gln Leu Phe Ser Ile Phe Val Asn
 1075 1080 1085
 Leu Leu Glu Lys Gly Glu Asp Asp Lys Glu Leu Phe Val Asn Gln Ile
 1090 1095 1100
 Met Phe Ile Leu Asp Phe Ile Lys Ile Ile Asn Glu Lys Val Tyr Ile
 1105 1110 1115 1120
 Asn Ile Met Lys Ile Val Lys Lys Met Lys Asn Tyr Asp Glu Asn Ile
 1125 1130 1135
 Lys Arg Lys Asn Tyr Phe Thr Thr Tyr Ser Lys Asn Lys Tyr Phe Gln
 1140 1145 1150
 Leu Lys Lys Ile Asp Leu Glu Tyr Ile Asn Ser Asn Ile Asn Asn Lys
 1155 1160 1165
 Lys Lys Asn Thr Tyr Asn Asp Phe Phe Phe Asn Glu Asn Asn Ile Asn

1170 1175 1180
 Tyr Arg Tyr Gln Tyr Gln Ser Val His Lys Ala Ile Gln Leu Phe Ser
 1185 1190 1195 1200
 Asp Asn Ile Ile Arg Tyr Ser His Asn Glu Lys Ile Asn Thr His Tyr
 1205 1210 1215
 Lys Asn Asn Lys Tyr Ile Ile Lys Asp Ile Lys Thr Phe Tyr Lys Leu
 1220 1225 1230
 Asp Asn Phe Leu Ile Ser Asp Ile Leu Leu Ile Leu Glu Lys Gln Asn
 1235 1240 1245
 Lys Glu Gln Ile Phe Tyr Phe Leu Leu Phe Tyr Pro Phe Glu Leu Lys
 1250 1255 1260
 Gln Thr Val Ile His Ile Lys Asn Asn Thr Phe Leu Phe Asn Tyr Lys
 1265 1270 1275 1280
 Tyr Asp Glu Thr Phe Leu Phe Asn Met Glu Ile Leu Phe Leu Tyr Asn
 1285 1290 1295
 Phe Leu Lys Asn Lys Phe Ser Glu Lys Thr Cys Ser Phe Ser Ile Ile
 1300 1305 1310
 Asp Thr Thr Gln Phe Ile Asp Phe Ser Lys Asn Glu Tyr Thr Asn Gly
 1315 1320 1325
 His Thr Asn Glu Phe Tyr Glu His Leu Phe Asn Ser Ile Met Asp Glu
 1330 1335 1340
 Glu Asn
 1345
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 <213> Plasmodium falciparum
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 Arg Leu Glu Val Tyr Lys Lys Gly Thr Leu Lys Asn Thr Phe Phe Gly
 20 25 30
 Ser Ala Glu Ile His Ile Tyr Ser Glu Ile Val Lys Lys Leu Phe Pro
 35 40 45
 Cys Asn Val Tyr Phe Asn Ile Thr Asn Lys Asn Gln Ile Val Gly Thr
 50 55 60
 Ala Cys Leu Ser Phe His Tyr Ile Asn Leu Asp Cys Ile Lys Lys Asp
 65 70 75 80
 Asp Gln Ile Tyr Thr Ser Leu Phe Ile Glu Thr Ile Ile Ser Val Gln
 85 90 95
 Lys Asn Gln Thr Lys Asn Asn Glu Lys Ile Glu Lys Leu Ile Asp Glu
 100 105 110
 Gly Lys Glu His Phe Glu Ala Ile Lys Glu Thr Asp Leu Ser Thr Ser
 115 120 125
 Glu Tyr Ile Ile Ile Phe Phe Thr Asn Ile Tyr Lys Leu Ile His Val
 130 135 140
 Asp Ile Tyr Ile Tyr Ile Tyr Ile Tyr Met Tyr Ile Phe Phe Phe

145 150 155 160
 Phe Leu Ala Ile Tyr Lys Asn Ile Ser Asn Leu Val Leu Glu Asp Lys
 165 170 175
 Ile Arg Leu Phe Cys Lys Asn Leu Asn Gly Tyr Leu Leu His Ser Asn
 180 185 190
 Phe Tyr Ile Lys Arg Phe Tyr Asn Lys Tyr Tyr Phe Tyr Leu His Phe
 195 200 205
 Phe Lys Gly Lys Phe Tyr Trp Cys Tyr Tyr Asn Glu Glu Ala Asp Ala
 210 215 220
 Lys Val Lys Lys Lys Lys Lys Ile Tyr Ile Tyr Ile Tyr Ile Tyr Lys
 225 230 235 240
 Cys Ser Phe Val Leu Met Tyr Tyr Ile Cys Thr Tyr Ser Leu Ser Phe
 245 250 255
 Ile Phe Val Tyr Ile Ser Pro Leu Asn Phe Ile Asp Gly
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 <211> 314
 <212> PRT
 <213> Plasmodium falciparum

<400> 95
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 Lys Ile Ile Asp Asn Thr Val Asp Leu Asn Glu Glu Thr Ile Leu Asn
 35 40 45
 Ile Asp Asn Glu Lys Lys Ser Asp Leu Arg Ile Tyr Val Asp Lys Val
 50 55 60
 Asp Ser Ile Lys Met Glu Ile Lys Lys Ile Gln Lys Asn Val Asp Glu
 65 70 75 80
 Ile Ser Cys Leu Lys Asn Lys Ile Asn Ile Ser Ile Thr Val Glu Gln
 85 90 95
 Glu Asn Glu Leu Ser Ile Glu Leu Asn Lys Leu Ile Lys Asp Thr Asn
 100 105 110
 Asp Leu Ile Asn Ile Ile Lys Ile Asp Ile Arg Asn Leu Arg Lys Lys
 115 120 125
 Tyr Val Leu Arg Ser Lys Glu Ser Phe Tyr Ile Lys Lys Ala Ile Tyr
 130 135 140
 Asp Asn Val Ile Asn Ile Phe Lys Lys Ser Leu His Thr Tyr Gln Asp
 145 150 155 160
 Val Gln Asn Ile Tyr His Asp Gly Met Lys Asp Lys Ile Thr Arg His
 165 170 175
 Ile Lys Ile Met Tyr Pro Asn Tyr Ser Asp Glu Asp Ile Ser Thr Phe
 180 185 190
 Leu Asn Tyr Asp Asp Ile Asn Thr Gln Asn Leu Val Lys Trp Lys Leu
 195 200 205
 Gln Gly His Gln Asp Leu Lys Asn Ala Leu Thr Asp Val Glu Thr Lys

210 215 220
 Tyr Lys Asp Val Lys Thr Leu Glu Lys Ser Val Cys Asp Leu His Gln
 225 230 235 240
 Thr Ile Ile Glu Leu Ser Ala Leu Ile Glu Met Asn Asp Glu Ile Ile
 245 250 255
 Asp Asn Ile Tyr Asp His Val Asn Asp Ala Gln Tyr Phe Thr Glu Lys
 260 265 270
 Ala Asn Val Asp Leu Ile Glu Ala Arg Asn Ile Gln Lys Lys Thr Ser
 275 280 285
 Lys Trp Met Phe Tyr Leu Thr Val Thr Ile Ile Ile Leu Ile Leu Ile
 290 295 300
 Ile Phe Phe Pro Ile Ile Thr Lys Ile Ile
 305 310

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 <211> 415
 <212> PRT
 <213> Plasmodium falciparum

 <400> 96
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 20 25 30
 Arg Cys Phe Asn Pro Phe Val Arg Thr Lys Thr Ile Lys Lys Lys Val
 35 40 45
 Gln Pro Asn Phe Leu Lys Arg Val Ala Leu Asn Leu Lys Ile Pro Gln
 50 55 60
 Thr Ile Asn Leu Ile Arg Gly Lys Tyr Asn Leu Leu His Glu Ile Tyr
 65 70 75 80
 Val Asn Lys Lys Lys His Ile Phe Asn Val Ile Tyr Lys Asp Ile Ile
 85 90 95
 Ser Asn Asn Lys Lys Arg Phe Leu Asn Met Leu Lys Asn Ile Val Lys
 100 105 110
 Lys Gln Arg Ser Ile Asn Ile Pro Leu Phe Phe Asn Lys Thr Met His
 115 120 125
 Ser Phe His Ser Asn Phe Ile Tyr Tyr Tyr Thr Tyr Phe Tyr Ile Leu
 130 135 140
 Arg Thr Asp Leu Tyr Leu Arg Thr Leu Lys Lys Phe His Asn Val Leu
 145 150 155 160
 Ile Gly Lys Phe Lys Ile Asn Ile Leu Ser Lys Val Ile Asn Ser Leu
 165 170 175
 Ser Ala Phe Asp Lys Met Phe Leu Trp Asn Asp Gly Arg Ile Ser Lys
 180 185 190
 Ile Leu His Lys Tyr Ile Leu Lys Cys Glu Arg Lys Leu Asn Arg Val
 195 200 205
 Ala Asp Glu Cys Phe Leu Asn Ser Pro Leu Cys Asn Asn Asn Thr Ser
 210 215 220
 Pro Val Lys Arg Lys Lys Arg Thr Trp Phe Cys Ser Asn Asp Asn Val

225

230

235

240

Ile Thr Tyr Asn Asp Phe Asn Asp Gln Val Glu Thr Lys Lys Glu Lys
245 250 255

Phe Tyr Ile Ser Ala Phe Lys Val Leu Pro Leu Phe Phe Tyr Asn Val
260 265 270

Phe Asn Ile Asn Phe Tyr Leu Lys Thr Ile Lys Lys Ile Arg Asn Ser
275 280 285

Ile Asn Thr Asn Ile Arg Leu Tyr Leu Leu Lys Asp Tyr Ile Asn Asp
290 295 300

Gln Asp Ser Ile Lys Ala Ile Phe Tyr Thr Tyr Lys Thr Phe Phe Gln
305 310 315 320

Leu Ser Leu Glu Lys Asn Ile Val Ser Leu Phe Arg Val Phe Gln Asp
325 330 335

Lys Met Ser Ile Glu Gln Lys Phe Glu Thr Thr Leu Ile Asn Asn Met
340 345 350

Glu Lys Gln Leu Lys Ile Lys Leu Pro Asn Ile Gly Leu Thr Asn Ile
355 360 365

Thr Asn Leu Ser Leu Ile Leu Phe Lys Leu Phe Ala Asn Lys Ile Thr
370 375 380

Gln Val Val Phe Tyr Leu Ile Leu Val Tyr Ile Lys Gln Phe Leu Tyr
385 390 395 400

Ala Arg Arg Lys Phe Leu Lys Asp Ile Tyr Ser Phe Pro Phe Tyr
405 410 415

<210> 97

<211> 284

<212> PRT

<213> Plasmodium falciparum

<400> 97

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Lys Ser Ser Ser Thr Lys Lys Ser Asp Tyr Lys Lys Ser Ser Ile Phe
35 40 45

Ser Lys Lys Arg Asp Ser His Lys Lys Gly Ser Ser Phe Arg Gly Arg
50 55 60

Arg Ser Gly Phe Ile Asn Arg Lys Ser Gly Ser Phe Lys Lys Pro Tyr
65 70 75 80

Tyr Asn Asn Arg Leu Ile Asn Lys Asn Tyr Asn Asn Tyr Lys Gly Arg
85 90 95

Asn Phe His Asn Gly Arg Asp Asn Phe Lys Gly Arg Thr Gly Ser Phe
100 105 110

Gly Ser Arg Val Phe Asp Asn Arg Lys Gly Ser Phe Lys Lys Arg Phe
115 120 125

Ile Ser Asn Arg Asn Lys Ser Ser Val Lys Ser Tyr Arg Gly Asn Gly
130 135 140

Ser Asn Lys Met Gly Arg Lys Ser Phe Asn Lys Ala Pro Thr Ser Arg
145 150 155 160 165 170 175 180 185 190 195 200

145 150 155 160
 Thr Val Val Thr Lys Arg Leu Asn Asn Tyr Lys Thr Val Ser Ala Pro
 165 170 175
 Val Lys Lys Phe Asn Asn Leu Asn Ile Ser Leu Tyr Arg Lys Asn Arg
 180 185 190
 Thr Phe Ala Leu Asn Thr Lys Arg Ser Lys Pro Val Gly Thr Ile Lys
 195 200 205
 Ser Ser Val Pro Arg Lys Arg Ile Lys Lys Gly Leu Lys Lys Gly Ser
 210 215 220
 Leu Lys Ser Lys Thr Arg Lys Ser Thr Ser Gly Ser Lys Phe Lys Pro
 225 230 235 240
 Leu Asn Lys Tyr Phe Leu Ser Lys Ile Lys Ile Val Thr Ser Leu Asn
 245 250 255
 Lys Ile Pro Ser Pro Leu Lys Glu Gln Lys Asn Thr Glu Val Asn Leu
 260 265 270
 Pro Glu Ser Leu Asn Asn Ala Thr Thr Lys Lys Asn
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<210> 98
 <211> 1121
 <212> PRT
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<400> 98
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 Val Asn Leu Asn Tyr Glu Thr Asn Asn Glu Lys Arg Thr Asn Lys Lys
 35 40 45
 Ile Tyr Lys Lys Ser Lys Ala Gln Ser Leu Phe Asp Lys Gly Leu Asn
 50 55 60
 Ile His Asp Lys Leu Ile Leu Phe Lys Asn Leu Pro Lys Tyr Lys Cys
 65 70 75 80
 Ala Lys Tyr Glu Cys Ile Ser Ala Lys Glu Val Tyr Lys Tyr Leu Leu
 85 90 95
 Asp Glu Tyr Lys Lys Cys Phe Asn Tyr Ile Ser Leu Cys Asp Ile Ile
 100 105 110
 Gln Ser Val Lys Ile Phe Asp Glu Leu Asp Lys Thr Phe Thr Asp Tyr
 115 120 125
 Asn Phe Tyr Ile Glu Val Lys Asn Ile Asp Lys Asn Val Leu Asn Lys
 130 135 140
 Ile Asn Glu Ile Tyr Phe Lys Asn Lys Asp Ile Thr Phe His Arg Arg
 145 150 155 160
 Glu Ile Leu Gly Lys Ile Cys Asn Lys Ile Met Ser Tyr Ile His Glu
 165 170 175
 Met Asn Gly Asn Glu Leu Ile His Phe Leu Ile Tyr Phe Phe Arg Trp
 180 185 190
 Asn Lys Asn Asp Lys Asn Leu Ile Leu Phe Tyr Asn Tyr Tyr Phe Asn

195					200					205					
Tyr	Val	Phe	Asp	His	Met	Tyr	Leu	Phe	Asn	His	Glu	Ile	Tyr	Lys	Leu
210						215					220				
Leu	Phe	Ile	Phe	Asn	Lys	Tyr	Leu	Asn	Asn	Asn	Ser	Asn	Ile	Pro	Phe
225					230					235					240
Asn	Lys	Asn	Leu	Ile	Gln	Glu	Met	Glu	Phe	Asn	Leu	Tyr	Tyr	Phe	Arg
				245					250					255	
Glu	Ile	Lys	Asn	Glu	Lys	Asn	Tyr	Ile	Ile	Lys	Met	Asn	Lys	Lys	Glu
			260					265					270		
Ile	Tyr	Lys	Lys	Cys	Phe	Ala	Lys	Phe	His	Glu	Asn	Val	Asp	His	Ile
		275					280					285			
Asp	Asn	Glu	Lys	Ile	Leu	Asn	Ile	Leu	Arg	Leu	Tyr	Val	Asp	Asn	Ser
	290						295					300			
Ile	Leu	Asp	Ile	Asp	Ile	Asn	Asn	Lys	Met	Leu	Cys	Asn	Leu	Asn	Asn
305					310					315					320
Asn	Leu	Ile	Asn	Glu	Asn	Ile	Glu	Tyr	Ile	Ser	Lys	Leu	Leu	Asn	Phe
				325					330					335	
Tyr	Cys	Thr	Leu	Ile	Lys	Lys	Gly	Lys	Tyr	Asp	Asn	Asp	Met	Thr	Ile
			340				345						350		
Tyr	Lys	Leu	Lys	Glu	Val	Ile	Lys	Ala	Thr	His	His	Ile	Leu	Cys	Asp
		355					360					365			
Lys	Thr	Lys	Asn	Leu	Glu	Thr	Phe	Cys	Ser	Asp	Ile	Asp	Tyr	Ser	Thr
	370						375					380			
Leu	Leu	Asn	Ser	Leu	Asn	Asn	Lys	Phe	Ile	Leu	Asn	Lys	Ile	Ile	Asp
385					390					395					400
Lys	Asn	Phe	Ile	Leu	Phe	Tyr	Glu	Cys	Leu	Leu	Lys	Ile	Leu	Leu	Asn
				405					410					415	
Ile	Lys	Phe	Val	Asn	Phe	Gln	Ser	Leu	Cys	Ile	Ser	Leu	Ile	Ser	Leu
			420					425					430		
Lys	Asn	Ile	Tyr	Tyr	Asn	Ile	Leu	Arg	Asn	Asn	Val	Tyr	Ile	Val	Asn
		435					440					445			
Asn	Val	Leu	Phe	Asn	Asp	Ile	Met	Lys	Phe	Ser	Leu	Tyr	Leu	Cys	Asn
	450						455					460			
Ile	Phe	Leu	Gly	Lys	Arg	Ile	Lys	Thr	Glu	Asn	Glu	Asn	Ala	Val	Leu
465					470					475					480
Ile	Ile	His	Asn	Asn	Asp	Gln	Thr	Asn	Tyr	Ser	Asn	Lys	Glu	Asn	Ile
				485					490					495	
Lys	Asp	Ile	Ile	Ile	Gln	Lys	Arg	Ile	Lys	Glu	Tyr	Ile	Phe	Tyr	Lys
			500					505					510		
Met	Glu	Asn	Tyr	Lys	Asp	Phe	His	Phe	Lys	Leu	Lys	Asp	Ser	Asp	Leu
		515					520					525			
Leu	Ser	Ile	Lys	Leu	Leu	Ser	Asn	Thr	Phe	Val	Lys	Ile	Asn	Glu	Val
	530						535					540			
Tyr	Asn	Ser	Tyr	Asp	Phe	Tyr	Leu	Leu	Phe	Asn	Asn	Ile	Ser	Cys	Ile
545					550					555					560
Leu	Tyr	Asn	Phe	Leu	Val	Asn	Arg	Asn	Ser	Val	Lys	Lys	Tyr	Lys	Asp
				565				570						575	

Thr Tyr Ile Tyr Ile Leu Asn Asp Leu Ser Phe Val Tyr Lys Tyr Ile
 580 585 590
 Lys Asn Asn Asp Arg Thr Lys Lys Lys Lys Asn Phe Phe Leu Leu Ser
 595 600 605
 Ser Ser Met Lys Glu Leu Ile Cys Lys Asn Ile Leu Ser Val Ser Asn
 610 615 620
 Arg Tyr Ile Lys His Leu His Glu Glu Asp Asn Phe Asp Gln Lys Asp
 625 630 635 640
 Gln Tyr Val Cys Ser Leu Thr Phe Leu Asn Asn Leu Phe Phe Asp Lys
 645 650 655
 Ile Ile His Phe His Tyr Ile Tyr Asn Leu Trp Cys His Val Tyr Lys
 660 665 670
 Thr Tyr Asn Tyr Phe Lys Cys Asn Lys Leu Ile Asn Glu Asp Ile Ile
 675 680 685
 Ser Leu Leu Leu Leu Thr Cys Ser Lys Phe Gln Tyr Phe Ile Glu Asn
 690 695 700
 Asn Ser Asn Asp Arg Tyr Cys Arg Lys Glu Leu Ile His Leu Lys Tyr
 705 710 715 720
 Asn Ile Ile Asp Asp Leu Ile Lys Asn Tyr Leu Asn Thr Tyr Lys Ser
 725 730 735
 Ile Ser Ile Asp Asn Ile Ser Lys Ile Phe Ile Ser Leu Ser Asn Ser
 740 745 750
 Lys Tyr Thr Cys Glu Val Asn Glu Asn Leu Leu Leu Glu Ser Leu Gln
 755 760 765
 Ser Glu Phe Glu Lys Val Thr Lys Thr Ser Lys Lys Gly Gly Ile His
 770 775 780
 Met Met Asp Asn Asn Leu Leu Asp Asn Asn Asn Ser Cys Glu Lys Tyr
 785 790 795 800
 Glu His Arg Tyr Ile Glu Tyr Lys Lys Glu Asn Leu Phe Ile Asn Leu
 805 810 815
 Asn Lys Ile Ile Glu Cys Leu Ile Lys Leu Asn Ile Phe Leu Tyr Leu
 820 825 830
 Lys Lys Lys Lys Thr Tyr Leu Tyr Leu Tyr Lys Gln Ser Leu Cys Pro
 835 840 845
 Ile Asn Leu Lys Glu Asn Ile Leu Lys Lys Ile Leu Tyr Ile Ala Asn
 850 855 860
 Asn Leu Tyr Met Tyr Glu Met Tyr Gly Tyr Val Cys Glu Met Leu Glu
 865 870 875 880
 Arg Val Leu Ser Ser His Lys Glu Gln Asn Leu Phe Ser Tyr Asn Tyr
 885 890 895
 Asn Lys Asn Val Glu His Lys Met Phe Asp Lys Ile Leu Cys His Ile
 900 905 910
 Ser Glu Asp Asp Tyr Ile Glu Met Ser Asn Thr Met Tyr Val Leu Phe
 915 920 925
 Tyr Asp Tyr Leu Lys Asn Ile Asn Ser Glu Arg Gln Ser Asn Ile Leu
 930 935 940

Arg Asn Asn Ser Thr Asn Asp Arg Phe Ile Asp Glu Ile Lys Glu Lys
 945 950 955 960
 Lys Tyr Lys Leu Asn Asn Asn Thr Leu Ile Lys His Asn Asn Val Lys
 965 970 975
 Leu Asn Tyr Glu Lys Ser Asn Asn Ser Asn Gly Asn Ile Ser Asn Ile
 980 985 990
 Leu Lys Asp Asp Lys Asn Lys Asn His Asn Asn Val Glu Met Asp Leu
 995 1000 1005
 Ile Asp Asn Lys Asn Glu Asn Lys Lys Ile Gln Glu Lys Gly Gln Asn
 1010 1015 1020
 Gly Glu Asn Cys Glu Asn Cys Lys Asp Val Leu Val Asn Asp Ile Ile
 1025 1030 1035 1040
 Asn Ile Phe Gly Phe Leu Lys Met Glu Lys Lys Lys Phe Leu Phe Phe
 1045 1050 1055
 Gln Leu Tyr Met Tyr Leu Cys Asn Ile Thr Lys Phe Lys Arg Arg Tyr
 1060 1065 1070
 Val Ser Ser Ser Ser Leu Phe His Met Asp Val Phe Lys Ile Ile Lys
 1075 1080 1085
 Asp Met Asn Leu Lys Tyr Leu Cys Leu Glu Asn Tyr Lys Ile Lys Asn
 1090 1095 1100
 Glu Glu Cys Ala Phe Leu Tyr Thr Ile Asp Ile Val Leu Phe Lys Glu
 1105 1110 1115 1120

Arg

<210> 99
 <211> 235
 <212> PRT
 <213> Plasmodium falciparum

<400> 99

Met Glu Lys Lys Ser Ser Tyr Lys Thr Val Leu Leu Gly Glu Ser Ser
 1 5 10 15
 Val Gly Lys Ser Ser Ile Val Leu Arg Leu Thr Lys Asp Thr Phe His
 20 25 30
 Glu Asn Thr Asn Thr Thr Ile Gly Ala Ser Phe Cys Thr Tyr Val Val
 35 40 45
 Asn Leu Asn Asp Ile Asn Ile Lys Asn Asn Ser Asn Asn Glu Lys Asn
 50 55 60
 Asn Asn Ile Asn Ser Ile Asn Asp Asp Asn Asn Val Ile Ile Thr Asn
 65 70 75 80
 Gln His Asn Asn Tyr Asn Glu Asn Leu Cys Asn Ile Lys Phe Asp Ile
 85 90 95
 Trp Asp Thr Ala Gly Gln Glu Arg Tyr Ala Ser Ile Val Pro Leu Tyr
 100 105 110
 Tyr Arg Gly Ala Thr Cys Ala Ile Val Val Phe Asp Ile Ser Asn Ser
 115 120 125
 Asn Thr Leu Asp Arg Ala Lys Thr Trp Val Asn Gln Leu Lys Ile Ser
 130 135 140

204

Ser Asn Tyr Ile Ile Ile Leu Val Ala Asn Lys Ile Asp Lys Asn Lys
 145 150 155 160
 Phe Gln Val Asp Ile Leu Glu Val Gln Lys Tyr Ala Gln Asp Asn Asn
 165 170 175
 Leu Leu Phe Ile Gln Thr Ser Ala Lys Thr Gly Thr Asn Ile Lys Asn
 180 185 190
 Ile Phe Tyr Met Leu Ala Glu Glu Ile Tyr Lys Asn Ile Ile Asn Asn
 195 200 205
 Asn Asn Thr Ser Lys Asn Lys Thr Val Asn Lys Asn Leu Ile Asn Leu
 210 215 220
 Asp Asn Gln Thr Leu Ser Lys Lys Gly Cys Cys
 225 230 235

<210> 100

<211> 384

<212> PRT

<213> Plasmodium falciparum

<400> 100

Met Phe Leu Tyr Phe Ile Thr Tyr Leu Cys Ile Phe His Asn Asn Ile
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 Tyr Ser Val Glu Leu Ile Lys Asn Asn Lys Tyr Asn Phe Ile Asn Asn
 20 25 30
 Val His Asn Ile Lys Tyr Arg Thr Lys Ile Arg Ala Ile Tyr Gly Lys
 35 40 45
 Ser Asn Lys Tyr Val Tyr Met Phe Val Cys Leu Tyr Val Ser Gly Gly
 50 55 60
 Lys Ile Ile Gly His Gly His Ser Tyr Pro Ser Thr Glu Ile Tyr Asn
 65 70 75 80
 Asp Glu Leu Lys Lys Tyr Val Asp Thr Asn Asp Glu Trp Ile Arg Thr
 85 90 95
 Arg Thr Gly Ile Lys Lys Arg Arg Ile Leu Lys Arg Asp Glu Asn Ile
 100 105 110
 Ser Met Leu Gln Ile Asp Ser Ala Thr Gln Ala Leu Glu Thr Ser Cys
 115 120 125
 Leu Lys Pro Ser Asp Ile Asp Met Val Ile Asn Ala Ser Ser Thr Pro
 130 135 140
 Gln Asn Leu Phe Gly Asp Ala Asn Asn Ile Ser Asn Lys Ile Gly Cys
 145 150 155 160
 Lys Asn Ser Val Asn Met Asp Leu Thr Ala Ala Cys Thr Gly Phe Ile
 165 170 175
 Phe Ala Phe Val Thr Ala Tyr Asn Phe Leu Asn Arg Tyr Lys Asn Ile
 180 185 190
 Leu Ile Val Gly Ser Asp Ala Leu Ser Asn Phe Val Asp Trp Arg Asp
 195 200 205
 Arg Asn Thr Cys Val Leu Phe Gly Asp Ala Ala Gly Ala Val Val Leu
 210 215 220
 Gln Arg Thr Glu Glu Lys Glu Glu Asn Lys Ile Phe Asn Tyr Tyr Leu
 225 230 235 240

Gly Ser Asp Ser Glu Leu Asn Asp Leu Leu Thr Ile Asn Phe Asp His
 245 250 255
 Asp Lys Tyr Asn Leu Asp Lys Pro Asn Val Asn Lys Tyr Gly Lys Leu
 260 265 270
 Tyr Met Asn Gly Lys Glu Val Phe Lys Tyr Thr Ile Ser Asn Ile Pro
 275 280 285
 Lys Ile Leu Lys Lys Ala Ile Gln His Ser Asn Ile Asn Ile Glu Asp
 290 295 300
 Ile Asn Tyr Phe Ile Phe His Gln Ala Asn Ile Arg Ile Ile Glu Thr
 305 310 315 320
 Val Ala Lys Asn Leu Asn Ile Pro Met Ser Lys Val Leu Val Asn Leu
 325 330 335
 Asp Glu Tyr Ala Asn Thr Ser Ala Ala Ser Ile Pro Leu Cys Phe Ser
 340 345 350
 Glu Asn Ile Lys Asn Gly Lys Ile Lys Thr Asn Asp Ile Ile Cys Met
 355 360 365
 Cys Gly Phe Gly Ala Gly Met Ser Tyr Gly Cys Val Ile Leu Lys Tyr
 370 375 380

<210> 101
 <211> 1245
 <212> PRT
 <213> Plasmodium falciparum

<400> 101
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 Leu Leu Tyr Lys Lys Asn Phe Asn Phe Lys Leu Phe Ser Tyr Leu Lys
 20 25 30
 Val Cys Tyr His Asn Asp Leu Trp Leu His Lys Lys Asn Gln Asn Gly
 35 40 45
 Asp Ser Asp Ser Arg Asn Ile Ser Leu Val Ser Ala Gln Ile Asn Asn
 50 55 60
 Glu Asn Lys Asn Asn Asn Ile Ser Asp Asp Lys Asp Leu Lys Ser Asp
 65 70 75 80
 Gly Val Lys Lys Cys Ile Gly Gln Lys Asn Lys Leu Tyr Phe Asp Glu
 85 90 95
 Lys Ile Leu Leu Lys Phe Gly Asn Met Gly Thr Tyr Lys Lys Trp Gln
 100 105 110
 Cys Ser Phe Phe Ser Thr Ser Glu Glu Lys Lys Tyr Lys Ile Glu Lys
 115 120 125
 Tyr Met Lys Leu Asp Glu Lys Lys Lys Asp Asn Asn Ile Ser Cys Asn
 130 135 140
 Asp Leu Asp Asn Thr Gln Met Lys Ile Lys Asn Gln Val Val Gly Asn
 145 150 155 160
 Asp Phe Asn Gly Cys Asn Leu Glu Glu Arg Lys Asp Asn Asn Glu Tyr
 165 170 175

Asp Asn Asp Lys Tyr Lys Lys Asp Ser Phe Glu Gln Asp Glu Glu Asn
 180 185 190
 Glu Lys Met Arg Lys Lys Lys Glu Ile Lys Lys Ile Leu Asn Ile Ile
 195 200 205
 Phe Cys Ser Ser Ile Pro Met Ile Gly Phe Gly Phe Met Asp Gln Phe
 210 215 220
 Ile Met Ile Arg Leu Gly Asp Ile Phe Asp Ala Ser Ile Gly Val Thr
 225 230 235 240
 Phe Gly Ile Ser Thr Leu Cys Ala Ala Ser Phe Gly Gln Leu Cys Ser
 245 250 255
 Asp Thr Phe Gly Ile Phe Phe Gly Tyr Val Leu Asn Tyr Leu Leu Gln
 260 265 270
 Thr Tyr Lys Ile Ile Gln Pro Ile Lys Tyr Asp Ile Lys Asn Lys Val
 275 280 285
 Tyr Gln Tyr Cys Thr Leu Ile Gly Ser Val Leu Gly Ile Leu Phe Gly
 290 295 300
 Cys Ala Leu Gly Met Leu Gln Leu Ile Phe Ile Asp Thr Thr Lys Ser
 305 310 315 320
 Glu Arg Leu Lys Lys Lys Lys Glu Leu Asp Phe Ile Phe Gln Met Val
 325 330 335
 Met Cys Asp Cys Ser Asn Val Leu Asn Cys Glu Ala Ser Thr Leu Phe
 340 345 350
 Leu Tyr Asp Lys Ala Lys Asn Glu Leu Trp Ser Lys Ala Ile His Gly
 355 360 365
 Arg Lys Asn Ile Ile Lys Ile Ser Ala Asp Ser Asp Glu Lys Ser Phe
 370 375 380
 Asn Leu Trp Val Leu Arg Asn Lys Glu Ile Ile Asn Cys Lys Asp Val
 385 390 395 400
 Ala Asn His Glu Leu Phe Asn Pro Ser His Asp Glu Lys Phe Asn Phe
 405 410 415
 Lys Thr Lys Thr Ile Leu Ala Ala Pro Ile Leu Asp Lys Asn Asp Glu
 420 425 430
 Val Val Gly Val Leu Met Phe Leu Asn Lys Leu Arg Ser His Gly Gly
 435 440 445
 Tyr Phe Thr Arg Asp Asp Glu Lys Leu Ala Glu Met Met Cys Lys His
 450 455 460
 Ile Ser Ile Phe Met Glu Lys Phe His Tyr Ile Ser Glu Gly Asp Lys
 465 470 475 480
 Lys Met Ile Ile Phe Asp Lys Glu Lys Asn Asn Val Lys Glu Glu Asp
 485 490 495
 Asp Glu Asp Asp Asp Tyr Asp Asn Asp Asn Asp Asp Asp Glu Glu Gly
 500 505 510
 Thr Glu Leu Lys Glu Lys Glu Lys Val Lys Glu Glu Lys Tyr Glu Asp
 515 520 525
 Ile Lys Lys Lys Lys Lys Arg Gln Lys Arg Asn Ile Leu Pro Tyr Asn
 530 535 540
 Ile Leu Lys Met Glu Lys Asp Asp Asp Lys Ile Phe Asp Glu Gly Asp

545 550 555 560
 Glu Asn Arg Glu Ser Lys Glu Leu Asn Glu Asp Glu Asp Glu Glu Glu
 565 570 575
 Asp Glu Glu Glu Asp Glu Glu Glu Asp Glu Glu Val Val Tyr Glu Glu
 580 585 590
 Asn Ile Lys Glu Asn Lys Asp Asp Ile Asp Tyr Asp Asp Asp Lys Tyr
 595 600 605
 Asp Lys Asn Tyr Glu His Asp Glu Lys Lys Glu Asn Ile Phe Tyr Lys
 610 615 620
 Gln Asn Gly Asp Asp His Asp Glu Asn Asn Tyr Glu Leu Ile Gln Asp
 625 630 635 640
 Tyr Tyr Tyr Val Glu Lys Asn Asn Ile Tyr Asn Lys Asn Asp Thr Ile
 645 650 655
 Gln Tyr Glu Gln Asn Asn Asn Ile Tyr Lys Thr Lys Phe Ser Asn Asn
 660 665 670
 Ile Tyr Thr Pro Lys Phe Asp Asn Tyr Met Asp Tyr Lys Gly Asn Ile
 675 680 685
 Lys Glu His Thr Ala Asn Asn Ile Lys His Gln Leu Leu Leu Phe Asn
 690 695 700
 Ile Asp Lys Thr Met Lys Asp Glu Ile Leu Thr Ser Asp Lys Ile Asn
 705 710 715 720
 Lys Asp Lys Ser Ser Asp Asp Ile Ile Asn Ser Asn Lys Thr Tyr Asn
 725 730 735
 Glu Lys Asn Lys Leu Tyr Thr Ser Thr Thr Gly Ile His Lys Asn Asn
 740 745 750
 Met Gly Asp Lys Leu Gln Asp Asp Thr Phe Tyr Phe Lys Leu Leu Asn
 755 760 765
 Lys Asn Lys Tyr Tyr Met Asn Asn Val Asn Gly Asn Leu Asp Ile Tyr
 770 775 780
 Tyr Ile Leu Tyr Asn Ile Glu Ser Val Glu Gln Leu Phe Lys Lys Ile
 785 790 795 800
 Lys Glu Asn Asn Phe Leu Leu Phe Asn Met Lys Asn Cys Ile Arg Met
 805 810 815
 Phe Ile Leu Phe Arg Asp Leu Tyr Val Lys Glu Glu Asn Gly Tyr Asn
 820 825 830
 Ile Ile Lys Ser Gln Asn Asn Thr Thr Thr Ile Thr Thr Thr Thr Asn
 835 840 845
 Ser Asn Asp Ser Asn Asp Ser Ser Asp Asn Asn Asn Asn Asn Asn
 850 855 860
 Asn Asn Asn Asn Asn Asn Asn Tyr Asn Asn Asn Asn Ser Val Ile Phe
 865 870 875 880
 Ser Thr Asn Glu Lys Ile Tyr Asp Met Leu Asn Arg Asp Asn Ile Tyr
 885 890 895
 Lys Lys Val Lys Lys Glu Ile Phe Glu Gly Asp Ser Ile Ile Lys Thr
 900 905 910
 Met Glu Asn Lys Pro Asn Leu Thr Asn Lys Asn Tyr Met Asn Asn Asp
 915 920 925

Asn Ile Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn Ile Asp Asn
 930 935 940
 Asn Asn Asn Asn Asn Gly Asp Asn Ile Tyr Asn Asp Asp Leu Lys Lys
 945 950 955 960
 Tyr Tyr Leu Asn Thr Ser Ile Phe Asn Lys Asp Leu Tyr Val Lys His
 965 970 975
 Phe Val Asp Ile Ile Met Asn Lys Ser Leu Glu Glu Ile Ile Lys Met
 980 985 990
 Asn Val Tyr Ile Ser Glu Arg Ile Asn Ser Leu Leu Phe His Lys Gly
 995 1000 1005
 Asn Met Leu Asn Asp Val Thr Lys Leu Tyr Met Ser Asn Ala Tyr Gly
 1010 1015 1020
 Glu Lys Cys Phe Phe Phe Asn Phe Pro Gln Ile Lys Glu Ile Ile Phe
 1025 1030 1035 1040
 Val Asn Glu Tyr Glu Lys Lys Met Asp Met Lys Tyr Phe Lys Met Leu
 1045 1050 1055
 Lys Lys Ile Tyr Lys Tyr Asn Leu Asn Lys Ile Phe Ser Asn Asn Tyr
 1060 1065 1070
 Lys Phe Phe Ile Ile Lys Lys Lys Lys Lys Leu Lys Lys Leu Cys Tyr
 1075 1080 1085
 Ile Met Lys Ser Phe His Pro His Ile Leu Asp Glu Phe Trp Phe Asn
 1090 1095 1100
 Leu Ser Cys Gln Asn Glu Ile Lys Asn Ile Tyr Tyr Lys Asn Leu His
 1105 1110 1115 1120
 Phe Val Ile Ser Leu His Asn Ser Ser Ile Ile Asp Phe Lys Ile Ile
 1125 1130 1135
 Asn His Phe Ile Leu Asn Lys Ile Phe Glu Asn Ile Ser Ile Asn Cys
 1140 1145 1150
 Thr Thr Ser Ser Met Tyr Tyr Asn Ile Lys Thr Ile Asp Phe Ile Ser
 1155 1160 1165
 Tyr Arg Asn Leu Tyr Leu Leu Lys Asn Tyr Thr Met His Asp Leu Ile
 1170 1175 1180
 Tyr Lys Tyr Ile Ile Tyr Tyr Tyr Cys Arg Lys Lys Leu Lys Arg Lys
 1185 1190 1195 1200
 Asn Phe His Tyr Phe Asn Tyr Gln Asp Leu Tyr Ile Ala Glu Asn Tyr
 1205 1210 1215
 Phe Gly Leu Asn Thr His Thr Lys Lys Val Pro Asn Met Leu Asp Gln
 1220 1225 1230
 Asn Ile Gly Lys Lys Ser Ala Ile Val Thr Val Glu Arg
 1235 1240 1245

<210> 102

<211> 209

<212> PRT

<213> Plasmodium falciparum

<400> 102

Met Leu Phe Leu Phe Leu Cys Ile Ile Ile Asn Thr Leu Val Phe Leu
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Trp Phe Val Ile Asn Ile Phe Leu Lys Ser Ser Asn Thr Tyr Lys Asp
 20 25 30
 Lys Gly Arg Asn Glu Met Val Glu Met Gly Val Val Leu Gly Ser Gly
 35 40 45
 Gly His Thr Tyr Glu Met Ile Gln Ile Leu Lys Gln Ile Lys Asn Ser
 50 55 60
 Asn Ile Leu Phe Asn Phe Phe Tyr Ser His Asn Asp Asn Leu Ser Lys
 65 70 75 80
 Ile Lys Thr Glu Asn Glu Leu Val Asn Tyr Gln Lys Asn Phe Phe Val
 85 90 95
 Ile Pro Arg Cys Arg Asn Val Gly Asp Ser Tyr Ser Leu Ser Phe Ile
 100 105 110
 Lys Phe Ile Phe Ser Phe Leu Tyr Cys Ile Phe Leu Thr Tyr Lys Met
 115 120 125
 Lys Asn Met Lys Val Ile Met Val Asn Gly Pro Gly Val Cys Val Pro
 130 135 140
 Leu Val Tyr Ser Leu Ile Phe Arg Lys Tyr Ile Phe Leu Lys Asn Ile
 145 150 155 160
 Lys Ile Val Tyr Ile Glu Ser Ile Cys Arg Val Tyr Ser Leu Ser Leu
 165 170 175
 Ser Ala Lys Leu Leu Tyr Tyr Phe Ala Asp Leu Phe Val Val Phe Ser
 180 185 190
 Glu His Leu Lys Lys Lys Tyr Lys Lys Ala Lys Tyr Tyr Gly Tyr Phe
 195 200 205
 Phe

<210> 103
 <211> 1233
 <212> PRT
 <213> Plasmodium falciparum

<400> 103
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 Gly Leu Gln Ile Asn Asn Asn Gly Asn Lys Tyr Glu Gly Leu Phe Lys
 35 40 45
 Asn Asp Glu Lys Tyr Leu Phe Gly Leu Glu Leu Ile Cys Cys Leu Cys
 50 55 60
 Gly His Thr Tyr Arg Asn Lys Val Gln Asn Gly Ile Tyr Glu Lys Gly
 65 70 75 80
 Lys Ile His Tyr Lys Asp Val Asn Asn Ile Ser Ala Tyr Asn Asn Asp
 85 90 95
 Asp Gln His Asp Asn Ile His His Glu Lys Val Tyr His Glu Asn Ile
 100 105 110
 His His Glu Lys Val Tyr His Glu Asn Ile His His Glu Lys Val Tyr
 115 120 125

His Asp Asn Ile Asn His Glu Lys Val Tyr His Gly Asn Ile Tyr Asp
 130 135 140
 His Asn Ile Tyr His Asn Asn Lys Phe Asn Phe Gln Tyr Ser Ser Glu
 145 150 155 160
 Asn Glu Phe Ala Lys Gly Asn Ile Cys Val His Glu Asn Arg Tyr Ile
 165 170 175
 Tyr Ile Gly Thr Tyr Lys Lys Gly Lys Lys His Gly Lys Gly Ile Leu
 180 185 190
 Ile Asn Tyr Asn Asn Tyr Phe Met Tyr Ser Cys Ile Phe Tyr Lys Asn
 195 200 205
 Lys Ile Ile Tyr Val Asp Met Leu Phe Ser Lys Val Gln Lys Tyr Met
 210 215 220
 Asn Met Lys Asn Ile Asp Met Lys His Tyr Asn Thr His Lys Lys Lys
 225 230 235 240
 Lys Ile Tyr Leu Phe Leu Gln Lys Glu Tyr Lys Asn Lys Ile Leu Gly
 245 250 255
 Phe Ile Asn Phe Tyr Lys His Ile Thr His Lys Ile Lys Lys Lys Gln
 260 265 270
 Glu Asn Val His Asp Lys Ile Thr Phe Leu Lys Cys Leu Lys Glu Leu
 275 280 285
 Phe Phe Val Thr His Thr Asn Lys Glu Asn Asn Gln Met Glu Gly Ile
 290 295 300
 Ile His Thr Tyr Lys Asn Tyr Thr Ile Asn Lys Asn Asp Asn Thr Tyr
 305 310 315 320
 Asn Ile Phe Lys Glu Lys Leu His Asn Ile Thr Gln Gly Gly Asn Lys
 325 330 335
 Thr Gln His Glu Lys Arg Tyr Met Lys Thr Ile Tyr Arg His Ala Gly
 340 345 350
 His Glu Asn Val Ile Leu Asn Asn Lys Arg Lys Glu Lys Asn Lys Ser
 355 360 365
 Thr Asn Met Ser Ser Asp Glu Lys Lys Thr Asn Lys His Thr Asn Ile
 370 375 380
 Ser Ser Asp Glu Lys Lys Lys Asn Lys His Thr Asn Ile Ser Ser Asp
 385 390 395 400
 Glu Lys Lys Lys Lys Lys Arg Thr Asn Ile Thr Asn Asp Glu Lys Thr
 405 410 415
 Asn Lys His Thr Asn Ile Ile Asn Asp Glu Lys Thr Asn Lys Arg Thr
 420 425 430
 Asn Ile Ser Asn Asp Glu Lys Thr Asn Lys His Thr Thr Ile Ser Cys
 435 440 445
 Asp Glu Lys Lys Asn Gly Tyr Leu Phe Leu Ser Asn Glu Ile Lys Thr
 450 455 460
 Lys Tyr Cys Met Ile Glu Asn Met Lys Lys Lys Lys Glu Ser Tyr Thr
 465 470 475 480
 Met Ile Asn Asn Asn Lys Lys Lys Glu His Leu Tyr Asn Leu Lys Ser
 485 490 495

Met Ile Tyr Gln Glu Val Gln Phe His Asn Asn Ser Ile Cys Asp
500 505 510

His Glu Asn Lys Lys Lys Asn Arg Asn Ile Glu Met Pro Phe Phe Leu
515 520 525

Lys Arg Thr Lys Lys Asn Asn Asp Ile Glu Gln Leu Val Leu Val Lys
530 535 540

Asn Lys Tyr Asn Lys Cys Tyr Asn Leu Glu Ser Gly Lys Asp Asp Ile
545 550 555 560

Ile Tyr Asn Asn Gln Lys Asp Lys Ile Lys Lys Asp Lys Leu Lys Val
565 570 575

Pro Phe Phe Phe Lys Glu Lys Gly Ile Tyr Asn Phe Phe Asn Lys Thr
580 585 590

Val Glu Asn Lys Glu Asp Glu Arg Phe Phe Val His Glu Gln Asn Asp
595 600 605

Glu Lys Ile Phe Thr Asp Lys Val Thr Asn Asp Val Arg Thr Asn Asp
610 615 620

Ile Arg Thr Asn Asp Ile Arg Thr Asn Asp Val Arg Thr Tyr Asp Val
625 630 635 640

Arg Thr Asn Asp Val Arg Thr Asn Asp Ile Arg Thr Asn Asp Ile Arg
645 650 655

Thr Asn Asp Ile Arg Thr Asn Asp Ile Arg Thr Asn Asp Ile Arg Thr
660 665 670

Asn Asp Ile Pro Tyr Asn Ile Ile Pro Asn Lys Arg Glu Thr Ile Val
675 680 685

Asp Asp Ile Asn Ser Cys Ser Asn Asn Phe Thr Thr Arg Ser Asn Thr
690 695 700

Asp Asn Ala Asn Ser Tyr His Met Asn Met Tyr Ser Asp Ser Asn Asn
705 710 715 720

Phe Tyr Gly Asn Lys Lys Lys Lys Ile Lys Lys Arg Asn Asn Asn Lys
725 730 735

Cys Glu Tyr Ser Ser Ile Ile Lys Asn Lys Asn Gln Leu Tyr Asn Asp
740 745 750

Gln Ile His Asn Asn Thr Cys Val Cys Ile Lys Phe Lys Thr Lys Cys
755 760 765

Cys Ser Phe Lys Ile Asn Lys Leu Glu Lys Lys Lys Lys Glu Ser Tyr
770 775 780

Lys Cys Asn Ser His Lys Glu Leu Lys Gln His Asp Lys Asn Leu Leu
785 790 795 800

Phe Asn Asn Tyr Ile Phe Asn Asp Asn Phe Leu Asp Asn Val Phe Val
805 810 815

Leu Lys Pro Pro Met Asp Glu Glu Glu Lys Lys Lys Asn Tyr Asp Lys
820 825 830

Leu Lys Arg Asp Thr Phe Pro Leu Phe Leu Arg Lys Lys Lys Lys
835 840 845

Leu Phe Gln Ala Gln Asn Tyr Ile Tyr Trp Asn Ile Phe Glu Leu Asn
850 855 860

Leu Phe Phe Phe Leu Val Gly Ile Pro Lys Glu Ile Leu Glu Ile Phe

865	870	875	880
Ile Tyr His Arg Leu Asp Gly Tyr Cys Leu Lys Tyr Ile Asp Lys Lys	885	890	895
Ile Leu Lys Glu Met Lys Ile Lys Asn Arg Met Met Arg Lys Tyr Ile	900	905	910
Tyr Leu Cys Ile Gln Tyr Leu Leu Arg Leu Arg Glu Lys Tyr Lys Tyr	915	920	925
Lys Lys Lys Ser Asn Ser Lys Leu Thr Glu Lys Ile Asn Glu Asp Phe	930	935	940
Ile Leu Lys Lys Glu Gln Leu His Ile Leu Asn Leu Ile Gly Arg Gly	945	950	955
Gly Tyr Ser Asn Val Tyr Arg Cys Ile Tyr Gly Asn Lys Asn Ile Leu	965	970	975
Arg Ile Asn Lys Phe Phe Asp Ile His Tyr Ser Ile Asn Asn Thr Ala	980	985	990
Leu Lys Ile Phe Leu Asn Lys Lys Lys Asn Ile Leu Glu Tyr Phe Thr	995	1000	1005
Glu Leu Tyr Ile Val Ser Asn Leu Arg His Pro Asn Val Thr Leu Phe	1010	1015	1020
Leu Gly Ala Ile Asn Asn Pro Arg Ala Ile Val Leu Glu Tyr Ile Gln	1025	1030	1035
Tyr Gly Thr Leu Phe Asp Ile Leu His Lys Tyr Lys Ile Asn Met Lys	1045	1050	1055
Leu Gln Asp Ile Ile Lys Ile Ser Lys Asp Ile Thr Ala Phe Met Ser	1060	1065	1070
Phe Leu His Asn Lys Gly Ile Met His Cys Asp Leu Lys Ser Ser Asn	1075	1080	1085
Ile Leu Ile Ser Ile Thr Arg Asp Ile Lys Ile Cys Asp Phe Gly Leu	1090	1095	1100
Ser Val Phe Asn Lys Tyr Asn Lys Pro Lys Tyr Leu Gly Ile Val Gly	1105	1110	1115
Thr Tyr Gln Trp Thr Ala Pro Glu Val Leu Arg Ser Glu Gly Tyr Thr	1125	1130	1135
Lys Glu Ala Asp Ile Tyr Ser Phe Gly Val Ile Leu Trp Glu Met Ile	1140	1145	1150
His Arg Lys Ile Pro Phe Ser Asp Met Lys Asn Pro Leu Asp Ile Ile	1155	1160	1165
Ala His Val Gly Tyr Ala Asn Lys Lys Leu Ser Val Thr Asn Lys Asn	1170	1175	1180
Ile Pro Asp Gln Leu Lys Tyr Ile Leu His Ser Cys Leu His Lys Asn	1185	1190	1195
Thr His Lys Arg Lys Ser Phe Leu Phe Trp Ser Glu Tyr Phe Asp Phe	1205	1210	1215
Leu Tyr Asn Val Thr Asp Ile Pro Lys Glu Asp His Thr Ser Phe Phe	1220	1225	1230

Phe

<210> 104
 <211> 610
 <212> PRT
 <213> Plasmodium falciparum

<400> 104

Met	Cys	Glu	Lys	Asp	Asp	Ile	Thr	Val	Asn	Glu	Glu	Ile	Leu	Gln	Lys	1	5	10	15
Ala	Gln	Glu	Phe	Gln	Val	Glu	Asn	Glu	Lys	Asp	Ile	Lys	Met	Lys	Lys	20	25	30	
Leu	Lys	Pro	Ile	Thr	Glu	Gly	Leu	Leu	Lys	Pro	Glu	Val	Asp	Leu	Leu	35	40	45	
Gln	Ile	Ser	Glu	Arg	Gly	Ser	Arg	Gly	Arg	Val	Lys	Ile	Cys	Asn	Val	50	55	60	
Leu	Asn	Val	Pro	Arg	Ser	Glu	Lys	Glu	Tyr	Asn	Asn	Asn	Asn	Ser	Asp	65	70	75	80
Lys	Val	Glu	Asn	Lys	Tyr	Ile	Gly	Lys	Ile	Ile	Thr	Val	Cys	Gly	Trp	85	90	95	
Ser	Lys	Ala	Ile	Arg	Lys	Gln	Gly	Gly	Gly	Arg	Phe	Cys	Phe	Val	Asn	100	105	110	
Leu	Asn	Asp	Gly	Ser	Cys	His	Leu	Asn	Leu	Gln	Ile	Val	Val	Asn	Gln	115	120	125	
Cys	Ile	Glu	Asn	Tyr	Glu	Lys	Leu	Leu	Lys	Cys	Gly	Ala	Gly	Cys	Cys	130	135	140	
Phe	Arg	Phe	Thr	Gly	Glu	Leu	Ile	Ile	Ser	Pro	Val	Gln	Asn	Asp	Asn	145	150	155	160
Asn	Lys	Lys	Gly	Leu	Leu	Lys	Glu	Asn	Val	Glu	Leu	Ala	Leu	Asn	Asn	165	170	175	
Asn	Asp	Ile	His	Asn	Phe	Glu	Ile	Tyr	Gly	Glu	Asn	Leu	Asp	Pro	Gln	180	185	190	
Lys	Tyr	Pro	Leu	Ser	Lys	Lys	Asn	His	Gly	Lys	Glu	Phe	Leu	Arg	Glu	195	200	205	
Val	Ala	His	Leu	Arg	Pro	Arg	Ser	Tyr	Phe	Ile	Ser	Ser	Val	Ile	Arg	210	215	220	
Ile	Arg	Asn	Ser	Leu	Ser	Ile	Ala	Thr	His	Leu	Phe	Phe	Gln	Ser	Arg	225	230	235	240
Gly	Phe	Leu	Tyr	Ile	His	Thr	Pro	Leu	Ile	Thr	Thr	Ser	Asp	Cys	Glu	245	250	255	
Gly	Gly	Gly	Glu	Met	Phe	Thr	Val	Thr	Thr	Leu	Leu	Asn	Glu	Asn	Gly	260	265	270	
Asp	Ile	Arg	Ser	Ile	Pro	Arg	Ile	Asn	Leu	Lys	Asn	Lys	Lys	Lys	Glu	275	280	285	
Lys	Arg	Glu	Asp	Ile	Leu	Asn	Glu	Lys	Asn	Gly	Lys	Lys	Asp	His	Met	290	295	300	
Asn	Asp	Ser	Leu	Asn	Asn	Asn	Thr	Cys	Asn	Asn	Asn	Asn	Asn	Asn	Gly	305	310	315	320
Asn	Ser	Ser	Ser	Ser	Asn	Ile	Val	Ser	Ser	Pro	Gln	Tyr	Glu	Asp	Asn	325	330	335	

Tyr Leu Ile Asp Tyr Lys Lys Asp Phe Phe Ser Lys Gln Ala Phe Leu
 340 345 350
 Thr Val Ser Gly Gln Leu Ser Leu Glu Asn Leu Cys Ser Ser Met Gly
 355 360 365
 Asp Val Tyr Thr Phe Gly Pro Thr Phe Arg Ala Glu Asn Ser His Thr
 370 375 380
 Ser Arg His Leu Ala Glu Phe Trp Met Ile Glu Pro Glu Ile Ala Phe
 385 390 395 400
 Ala Asp Leu Tyr Asp Asn Met Glu Leu Ala Glu Ala Tyr Ile Lys Tyr
 405 410 415
 Cys Ile Asp Tyr Val Leu Asn Asn Asn Phe His Asp Ile Tyr Tyr Phe
 420 425 430
 Glu Glu Asn Val Glu Thr Asn Leu Ile Lys Arg Leu Lys Asn Ile Leu
 435 440 445
 Asn Glu Asp Phe Ala Lys Ile Thr Tyr Thr Asn Ala Ile Glu Ile Leu
 450 455 460
 Gln Asn Tyr Ser Asp Ser Phe Glu Val Lys Val Glu Trp Gly Met Asp
 465 470 475 480
 Leu Gln Ser Glu His Glu Arg Phe Ile Ala Glu Lys Ile Phe Lys Lys
 485 490 495
 Pro Val Ile Val Tyr Asn Tyr Pro Lys Asp Leu Lys Ala Phe Tyr Met
 500 505 510
 Lys Leu Asn Glu Asp Asn Lys Thr Val Ala Ala Met Asp Val Leu Val
 515 520 525
 Pro Lys Ile Gly Glu Val Ile Gly Gly Ser Gln Arg Glu Asp Asn Leu
 530 535 540
 Glu Arg Leu Asp Lys Met Ile Lys Glu Lys Lys Leu Asn Ile Asp Ser
 545 550 555 560
 Tyr Trp Trp Tyr Arg Gln Leu Arg Gln Tyr Gly Ser His Pro His Ala
 565 570 575
 Gly Phe Gly Leu Gly Phe Glu Arg Leu Ile Met Leu Val Thr Gly Val
 580 585 590
 Asp Asn Ile Lys Asp Thr Ile Pro Phe Pro Arg Tyr Pro Gly His Ala
 595 600 605
 Glu Phe
 610

<210> 105
 <211> 407
 <212> PRT
 <213> Plasmodium falciparum

<400> 105
 Met Phe Thr Phe Gly Thr Ser Arg Asn Lys Glu Ser Val Leu Lys Asn
 1 5 10 15
 Leu Ser Leu Leu Asn Glu Asp Glu Gly Lys Gly Trp Asn Ile Leu Tyr
 20 25 30
 Lys Leu Tyr Ser Gln Ile Ser Gly Cys Val Leu Ile Cys Lys Asn Lys
 35 40 45

Ile Ile Lys Tyr Asn Ser Tyr Asp Asn Ile Phe Leu Thr Leu Val Tyr
 50 55 60
 Gly Lys Ile Glu Asn Val Lys Asn Met Lys Glu Lys Asn Tyr Tyr Tyr
 65 70 75 80
 Asn Glu Ile Lys Leu Tyr Leu Lys Tyr Leu Pro Glu Ser Asn Ile Met
 85 90 95
 Ile Thr Thr Asn Asn Tyr Glu Asp Ile Asn Lys Met Lys Cys Leu Lys
 100 105 110
 Tyr Glu Val Leu Asn Asn Asn Ile Tyr Tyr Gln Lys His Asn Phe Ser
 115 120 125
 Leu Leu Lys Leu Tyr Ile Asn Ala Cys Asn Ser Gln Tyr Ile Lys Pro
 130 135 140
 Leu Leu Tyr Tyr Ser Leu His Thr Cys Ile Val Gly Asp Asn Glu Tyr
 145 150 155 160
 Ile Asn Val His Lys Lys Ile Leu Gln Lys Lys Lys Asn Glu Lys Tyr
 165 170 175
 Ile Ile Lys Lys Glu Pro Tyr Leu Leu Tyr Asn Asn Asn Asn Asn Asp
 180 185 190
 His Val Pro Asn Ile Leu Lys Ser Arg Lys Phe Leu Leu Lys Lys Leu
 195 200 205
 Asn Lys Glu Lys Gln Gly Asn Glu Leu Lys Leu His Leu His Cys Leu
 210 215 220
 Asn Val Thr Phe Gln Tyr Gln Cys Asn Lys Ile Lys Ser Ile Cys Ala
 225 230 235 240
 Pro Val Pro Ser His Phe Lys Asp Thr Leu His Ile Leu Gly Ala Ile
 245 250 255
 Asn Ile Ile Lys Asn Met Glu Asn Ile Gln Ile Leu Lys Asn Asp Asn
 260 265 270
 Leu Met Glu Asn Gln Asn Gln Gln Asn Lys Met Glu Leu Leu Lys Asn
 275 280 285
 Lys Asn Asn Asn Thr Tyr Glu Lys Ser Ile Gln Ile Lys Lys Lys His
 290 295 300
 Glu His Lys Lys Asp Glu Val Lys Tyr Tyr Asp Asn Met Gln Asp Lys
 305 310 315 320
 Glu Leu Phe Glu Lys Gln Asn Asp Asn Leu Leu Lys Asp Ile Tyr Tyr
 325 330 335
 Asn Lys Glu Asp Asp Asn Asn Lys Pro Lys Ile Asn Thr His Leu Asn
 340 345 350
 Ile Asn Glu Thr Val Asp Thr Tyr Asn His Leu Asn Asp Asp Asp Met
 355 360 365
 Tyr Val Asp Arg Asn Thr Ser Lys Lys Lys Arg Leu Thr Lys Arg Arg
 370 375 380
 Gly Ile Leu Ser Lys Asp Phe Asn Lys Leu Ser Lys Arg Asp Ala Pro
 385 390 395 400
 Ile Phe Phe Thr Asp Ile Ala
 405

<210> 106
 <211> 311
 <212> PRT
 <213> Plasmodium falciparum

<400> 106
 Met Arg Asn Asn Leu Ile Val Phe Ile Cys Ile Thr Leu Tyr Leu Ile
 1 5 10 15
 Ser Ser Ile Thr Cys Val Phe Ile Asn Lys Tyr Val Leu Met Glu Asn
 20 25 30
 Thr Ile Asp Ser Val Leu Leu Ile Phe Val Gln His Ile Ser Cys Leu
 35 40 45
 Met Phe Met Phe Phe Phe Lys Asp Ile Phe Phe Leu Lys Lys Glu Arg
 50 55 60
 Asp Glu Lys Asn Ile Lys Glu Ser Ile Phe Ser Leu Tyr Asn Glu Ile
 65 70 75 80
 Lys Glu Leu Trp Pro Leu Ile Ile Thr Phe Asn Phe Thr Leu Val Phe
 85 90 95
 Gly Asn Ile Cys Leu Lys Tyr Thr Ser Ile Ser Phe Tyr Gln Leu Ala
 100 105 110
 Arg Ser Met Thr Leu Pro Phe Asn Phe Phe Phe Ser Tyr Phe Phe Phe
 115 120 125
 Lys Gln Ile Lys Phe Asn Leu Leu Met Ile Ile Ser Cys Ile Ile Val
 130 135 140
 Ser Ile Gly Phe Leu Ile Phe Ser Leu Asp Ala Val Asn Thr Asn Tyr
 145 150 155 160
 Asn Ser Val Leu Tyr Gly Thr Ile Val Ser Ile Ile Gln Ala Ile His
 165 170 175
 Leu Asn Leu Ile Lys Lys Lys Leu Ile Ile Tyr Lys Asp Lys Met Val
 180 185 190
 Met Leu Tyr Tyr Asn Leu Ile Tyr Ser Ser Ile Ile Leu Phe Ile Tyr
 195 200 205
 Leu Phe Ile Thr Arg Asp Ile Phe Val Leu Val His Leu Asp Lys Arg
 210 215 220
 Leu Thr Phe Tyr Leu Ile Leu Ser Cys Ile Ser Ser Ile Phe Val Thr
 225 230 235 240
 Phe Ser Ser Phe Leu Cys Ile His Tyr Thr Asp Asn Val Val Phe Asn
 245 250 255
 Met Phe Gly Asn Val Lys Ser Thr Val Gln Thr Phe Met Ser Lys Tyr
 260 265 270
 Tyr Asn Ser Glu Asn Phe Asn Thr His Thr Ile Ile Gly Ile Ile Leu
 275 280 285
 Thr Thr Ser Gly Ser Cys Leu Tyr Thr Cys Cys Ser Glu Tyr Ser Lys
 290 295 300
 Lys Arg Lys Ile Thr Ser Lys
 305 310

<210> 107
 <211> 1844

<212> PRT

<213> Plasmodium falciparum

<400> 107

Met Asn Thr His Lys Asn Asn Asp Arg Phe Asp Glu Tyr Ser Leu Asn
 1 5 10 15

Asn Asn Ser Asn Leu Asn Ala Tyr Val Asn Met Ser Asn Glu Ala His
 20 25 30

Asn Asn Phe Leu Val Asn Arg Arg Asn Asp Met Asn Tyr Glu Met Tyr
 35 40 45

Asn Ser Ile Asn Ser Gly His Met Ser Asn Ile Asn Asn Asn Thr Asn
 50 55 60

Asn Leu Gln Asp Ala Tyr Ile Asn Lys Glu Leu His Tyr Met Asn Ser
 65 70 75 80

Asp Lys Ile Asn Ile Ala Lys Asn His Gln Asn Val His Met Thr Ala
 85 90 95

Thr Tyr Asn Asn Met Asp Lys Asn Asn Ala Asn Asn Asn Ile Ile His
 100 105 110

Leu Asn Asn His Ile Asn Met Thr Asp Asp Gln Asn Tyr Phe Tyr Asn
 115 120 125

Ser Thr Thr Asn Asn Lys Met Asn Asn Thr Leu Lys Glu Asn Asn Phe
 130 135 140

Asn Asn Asn Met Asn Thr Val Asn Asn Ser Phe Tyr His Asn Thr Asp
 145 150 155 160

Asn Asn Phe Leu Asn Phe Thr Arg Asn Gln Asn Glu Gln Asp Thr Tyr
 165 170 175

Val Asn Asn Asn Ile Ile Asn Asn Phe Asn Asn Gln Asn Val Asp Lys
 180 185 190

Asn Ile Asn Asn Asn Asn Asn Asn Pro Asn Lys Asn Val Glu Ser Ile
 195 200 205

Asn Lys Phe Asn His Ile Tyr Asn Met Gln Asn Phe Asn His Phe Ile
 210 215 220

Pro Asn Ile Ser Asn Gly Lys Asn Gly Asn Leu Glu Asn Asn Ala Ser
 225 230 235 240

Leu Ser His Asn Val Asn Ser Val Ser Thr Ile Ser Glu Leu His Asn
 245 250 255

Phe Asn Tyr Met Asn Asn Met Asp Leu Asn Asn Val Asp Met Asn Asn
 260 265 270

Met Asn Met Asn Asn Met Asn Met Asn Asn Met Asn Met Asn Asn Met
 275 280 285

Asn Met Asn Asn Met Asp Met Asn Asn Val Asn Met Asn Asn Met Asn
 290 295 300

Met Asn Asn Met Asp Val Asn Ser Met Asn Met Asn Asn Met Asp Asn
 305 310 315 320

Met Asn Asn Met Asn Met Asn Asn Met Asp Val Asn Asn Met Asn Met
 325 330 335

Asn Asn Met Asp Val Asn Asn Met Asp Asn Met Asn Asn Met Asp Asn
 340 345 350

Met	Asn	Asn	Met	Lys	Asn	Leu	Ser	Asn	Phe	Asn	Asn	Ser	Tyr	Gln	Tyr
		355					360					365			
Asn	Ser	Ile	Pro	Gln	Phe	Asn	Ser	Ser	Ser	Arg	Phe	Asn	Asn	Ile	Thr
	370					375					380				
His	Phe	Asn	Asn	Gly	Ile	Ser	His	Asn	Val	Asn	Asn	Val	Ser	Asn	Phe
385					390					395					400
Ser	Asn	Asn	Ala	His	Leu	Asp	Asn	Ser	Asn	Asn	Met	Asn	Arg	Leu	Asn
				405					410					415	
Ala	Val	Asn	Asn	Phe	Gly	Asp	Ile	Asn	Ser	Phe	His	Asp	Pro	Leu	Asn
			420					425					430		
Glu	Met	Gln	Val	Leu	Asn	Lys	Asn	Val	Asn	Met	Gln	Asn	Glu	Asn	His
		435					440					445			
Phe	Asn	Val	Met	Asn	Asp	Glu	Met	Lys	Asn	Tyr	Asn	Asn	Val	Lys	Arg
	450					455					460				
Ile	Asn	Ser	Ile	Ser	His	Ile	Pro	Tyr	Met	Asn	Asn	Leu	Lys	Asn	Tyr
465					470					475					480
Asn	Glu	His	Thr	Ser	Met	Val	Lys	Gly	Lys	Gly	Asn	Thr	Asn	Arg	Lys
				485					490					495	
Lys	Ser	Asn	Asn	Leu	Lys	Ile	Asn	Asn	Asn	Pro	Gly	Ser	Val	Asn	Ala
			500					505					510		
Arg	Ala	Ile	Ser	Glu	Asn	Asn	Gln	Ser	Thr	Ala	His	Gly	Asn	Ile	Pro
		515					520					525			
Met	Gly	Ser	Val	Asp	Lys	Val	Ile	Lys	His	Asp	Arg	Met	Asp	Asn	Asp
	530					535					540				
Leu	Lys	Asn	Ile	Asn	Asn	Met	Asn	Asn	Met	Asn	Ser	Met	Asn	Asn	Met
545					550					555					560
Asn	Ser	Met	Asn	Asn	Met	Asn	Asn	Met	Ile	Asn	Met	Asn	Asn	Met	Asn
				565					570					575	
Asn	Met	Asn	Asn	Met	Ile	Asn	Met	Asn	Asn	Met	Asn	Asn	Met	Asn	Asn
			580					585					590		
Met	Asn	Asn	Met	Ser	Asn	Met	Asn	Asn	Thr	Ser	Ile	Leu	Asn	Asn	Asn
		595					600					605			
Asn	Lys	Lys	Ile	Thr	Lys	Arg	Gly	Arg	Ala	Lys	Lys	Asn	Ser	Thr	Ile
	610					615					620				
Asn	Ile	Asn	Asn	Ile	Asn	Lys	Met	Asn	Ser	Thr	Asn	Asn	Lys	Ser	Ser
625					630					635					640
Met	Ile	Asn	Met	Asn	Ser	Val	Asn	Asn	Met	Asn	Ser	Val	Asn	Asn	Met
				645					650					655	
Asn	Ser	Val	Lys	Asn	Met	Asn	Ser	Val	Asn	Asn	Met	Asn	Ser	Val	Asn
			660					665					670		
Asn	Ile	Asn	Asn	Val	Asn	Asn	Ile	Asn	Asn	Val	Asn	Asn	Ile	Asn	Asn
		675					680					685			
Val	Asn	Asn	Ile	Asn	Asn	Val	Asn	Asn	Ile	Asn	Asn	Val	Asn	Asn	Ile
	690					695					700				
Asn	Asn	Val	Asn	Asn	Ile	Asn	Asn	Val	Asn	Asn	Met	Asn	Asn	Met	Phe
705					710				715						720
Asn	Val	Asn	Pro	Gln	Leu	Asn	Ile	Met	Gly	Ile	Met	Lys	Asp	Ile	Asn

725										730					735				
Asn	Asn	Asn	Ile	Thr	Val	Ser	Asn	Lys	Asn	Lys	Leu	Met	Asn	Asn	Tyr				
			740					745					750						
Ile	Asn	Asp	Asn	Asn	Ile	Met	Asn	Met	Glu	Gly	Ser	Ile	Asn	Glu	Thr				
		755					760					765							
Tyr	Asn	Phe	Asp	Gly	Thr	Leu	Asn	Asn	Lys	Asn	Val	Ser	Asn	Asn	Asn				
	770					775					780								
Asn	Asn	Asp	Ile	His	Asp	Lys	Gly	Val	Leu	Asn	Thr	Leu	Asn	Arg	Ser				
785					790					795					800				
Lys	Ser	Ser	Ser	Tyr	Ile	Lys	Pro	His	Arg	Asn	Leu	Thr	Leu	Pro	Ile				
				805					810					815					
Asn	Met	Tyr	Met	Asn	Asn	Thr	Tyr	Met	Tyr	Asn	Ser	Lys	Ala	Tyr	Val				
			820					825					830						
Asn	Tyr	Glu	Asn	Gln	Asn	Trp	Met	Ala	Gln	Gln	Asp	Cys	Asn	Asp	Lys				
		835					840					845							
Asn	Gly	Leu	Ser	Leu	Asn	Glu	Gly	Pro	Arg	Tyr	Asn	Asp	Asn	Asn	Asn				
	850					855					860								
Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn				
865					870					875					880				
Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	His	Ser	Ile	Ile	Asn				
				885					890					895					
Asn	Asn	Ile	Thr	Gln	Gly	Ile	His	Arg	Gly	Ser	Met	Ile	Asn	Asn	Gln				
			900					905					910						
His	Phe	Asp	Glu	Leu	Ser	Tyr	Asn	Pro	Asn	Gly	Ile	Phe	Leu	Glu	Lys				
		915					920					925							
Asn	Thr	Ile	Thr	Asn	Tyr	Asn	Glu	Met	Leu	Gly	Ser	Gly	Tyr	Asn	Asn				
	930					935					940								
Met	Tyr	Asp	Lys	Asn	Ala	Val	Lys	Gly	Asn	Met	Asn	Leu	Ile	Gly	Lys				
945					950				955						960				
His	Ser	Asn	Tyr	Asp	Leu	Met	Lys	Asn	Gly	Asn	Met	Ile	Asn	Gly	Tyr				
				965					970					975					
Lys	Leu	Asn	Met	Gln	Glu	Val	Gln	Lys	Gly	Met	Asn	Glu	Val	Gly	Lys				
			980					985					990						
Lys	Arg	Ala	Pro	Arg	Arg	Arg	Ala	Lys	Thr	Ile	Asn	Leu	Lys	Ser	Ile				
		995					1000					1005							
Asn	Arg	Phe	Asn	Thr	Val	Ser	Leu	Gly	Leu	Lys	Gly	Asn	His	Asn	Met				
	1010					1015					1020								
Glu	Asn	Met	Asn	Asn	Met	Asp	Asn	Met	Asp	Asn	Met	Asn	Asn	Met	Ile				
1025					1030					1035					1040				
Asn	Val	Ser	Asn	Val	Asn	Asn	Val	Asn	Asn	Met	Asn	Asn	Val	Asn	Asn				
				1045					1050					1055					
Val	Asn	Asn	Met	Asn	Asn	Val	Asn	Asn	Met	Asn	Asn	Val	Asn	Asn	Met				
			1060					1065					1070						
Asn	Asn	Val	Asn	Ser	Val	Asn	Asn	Met	Asn	Asn	Thr	Asn	Asn	Met	Asn				
		1075					1080					1085							
Asn	Met	Asn	Asn	Val	Asn	Ser	Val	Asn	Asn	Met	Asn	Asn	Thr	Asn	Asn				
	1090					1095						1100							

Met Asn Asn Met Asn Asn Thr Asn Asn Met Asn Asn Met Asn Arg Met
 1105 1110 1115 1120
 Asn His Ile Asp Asn Asn Met Val Thr Asn Leu Asn Tyr Met Asp Asn
 1125 1130 1135
 Lys Ile Asn Asn Ala Gly Asn Asn Leu Asn Gly Glu Phe Ser Lys Arg
 1140 1145 1150
 Ile Leu Tyr Asn Arg Ser Lys Ser Thr Glu Asn Ile Lys Glu Met Met
 1155 1160 1165
 Gln Pro His Asn Glu Ala Asn Asn Ile Ser Gly Asn Asn Thr Ser Asp
 1170 1175 1180
 Ser Asn Asn Ile Thr Leu Asn Lys Asn Leu Val Glu Met Ile Leu Arg
 1185 1190 1195 1200
 Asn Asn Lys Pro Ser Ile Asp Lys Asn Ile His Glu Ser Val Asn Arg
 1205 1210 1215
 Ser Tyr Thr Ser Phe Leu Met Asn Ile Gly Ser Ser Tyr Leu Lys Lys
 1220 1225 1230
 Lys Lys Thr Ala Glu Ile Lys Thr Gly Glu Asn Asn Thr Glu Asn Asn
 1235 1240 1245
 Lys Gly Ile Val Asn Val Asn Ser Gln Val Glu Glu Lys Gly Lys Ser
 1250 1255 1260
 Glu Asn Lys Ser Ile Leu Glu Ile Lys Lys Glu Gly Gln Ile Lys Asn
 1265 1270 1275 1280
 Val Ile Tyr Asn Asn Asn Asn Asn Asn Asn Glu Lys Asp Gln Asn Ala
 1285 1290 1295
 Asp Gln Tyr Gln Asp Gln Asn Lys Asn His Lys Gln Asp Gln Arg Gln
 1300 1305 1310
 Asp Gln Asn Lys Ser His Lys Gln Asp Gln Leu His Asp Gln Asn Gln
 1315 1320 1325
 Asn Gln Gly Gln Leu His Asp Gln Asn Gln Asn Gln Gly Gln Leu His
 1330 1335 1340
 Asp Gln Asn Gln Asn Gln Gly Gln Leu His Asp Gln Asn Ile Asn Gln
 1345 1350 1355 1360
 Gly Gln Leu Gln Asn Gln Asn Gln Asn Tyr Tyr Gln Asn Tyr Tyr Gln
 1365 1370 1375
 Asn His Tyr Gln Asn Asp His Gln Asn Asp His Gln Asn Asp His Gln
 1380 1385 1390
 Asn Asp His Gln Asn His Tyr Gln Asn Asn His Gln Asn Asp His Gln
 1395 1400 1405
 Asn Asp His Gln Asn Asp His Gln Asn Asp His Gln Asn His Tyr Pro
 1410 1415 1420
 Tyr Gln Tyr Gln Asp Gln Gly Val Ser Lys Glu Ile Asn Asn Lys Glu
 1425 1430 1435 1440
 Ile Glu Glu Asn Ile Asn Lys Leu Asn Glu Glu Ser Asp Glu Asn Asn
 1445 1450 1455
 Asn Leu Glu Ile Leu Asp Glu Glu Glu Ile Thr Asn Lys Ser Val Ile
 1460 1465 1470

Ser Asn Thr Met Asn Met Val Glu Leu Lys Asn Glu Asn Lys Asn Glu
 1475 1480 1485
 Met Met Ile Asn Asp Ile Lys Lys Glu Glu Glu Ile Ser Ala Gln Ile
 1490 1495 1500
 Val Glu Pro Val Lys Lys Arg Gly Arg Lys Lys Gly Ser Lys Phe Val
 1505 1510 1515 1520
 His Lys Asn Ile Thr Asn Glu His Ile Leu Ser Gln Leu Lys Glu Pro
 1525 1530 1535
 Lys Arg Lys Gly Arg Lys Arg Lys Ile Trp Ile Gln Pro Leu Asp Asn
 1540 1545 1550
 Tyr Asn Lys Val Glu Asp Asn Lys Leu Lys Glu Tyr Thr Asn Asn Ile
 1555 1560 1565
 Asp Ile Arg Asp Asp Asn Lys Ala Asn Thr Gln Asn Glu Asp Val Thr
 1570 1575 1580
 Thr Asn Asn Val Thr Thr Leu Cys Cys Asn Lys Lys Ala Lys Tyr Glu
 1585 1590 1595 1600
 Ser Met Asn Pro Asn Ser Ile Arg Asn Met Phe Ile Leu Leu Arg Asn
 1605 1610 1615
 Lys Leu Ser Asn Leu Asn Val Lys Asn Thr Met Asn Ser His Ser Glu
 1620 1625 1630
 Ile Asn Met Leu Ile Asn Asn Phe Ile Tyr Ile Leu Lys Ile Met Asn
 1635 1640 1645
 Lys His Lys Gln Met Leu Glu Asn Ile Tyr Thr Ile Asn Phe Thr Asn
 1650 1655 1660
 Ile Asp Asp Ile Cys Val Arg Asn Tyr Leu Glu Lys His Phe Pro Phe
 1665 1670 1675 1680
 Ile Lys Gly Tyr Arg Asn Lys Tyr Glu Ile Thr Asp Asp Leu Phe Met
 1685 1690 1695
 Gln Gly Asn Asp Asp Asn His Leu Ser Lys Asp Ile Asn Cys Ile Asn
 1700 1705 1710
 Gly Asn Glu Asp Ile Gly Leu Asn Ala Ser Cys Glu Gln Asn Glu Glu
 1715 1720 1725
 Asn Glu Asn His Glu Lys Ser Asp Met Tyr Asn Tyr Lys Asn Asp Asn
 1730 1735 1740
 Ser Ile Thr Asn Met Glu Lys Ser Pro Asn Asn Ile Thr Leu Val His
 1745 1750 1755 1760
 Lys Asn Ile Lys Asp Glu Asp Asn Phe Glu Thr Ile Phe Leu Lys Thr
 1765 1770 1775
 Arg Ser Ser Phe Ser Ser Val Asp Ser Asn Ile Ile His Ile Asp Asn
 1780 1785 1790
 Thr Gln Asn Phe Lys Leu Ser Asn Ser Ser Glu Asn Lys Leu Asn Gln
 1795 1800 1805
 Phe Glu Lys Lys Thr Val Leu Leu Ser Asn Asp Ile Leu Tyr Asp Ala
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 Lys Lys Glu Ile Glu Gln Ser Tyr Met Asn Ser Gln Glu Lys Glu Lys
 1825 1830 1835 1840
 Asn Tyr Leu His

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 <213> Plasmodium falciparum

<400> 108
 Met Tyr Thr Phe Asp Asp Thr Ser Phe Tyr Ile Phe Leu Leu Asn Lys
 1 5 10 15
 Ile Leu Leu Arg Arg Tyr Phe Ser Ser Asp Asn Ile Phe Asn Lys Asn
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 Val Lys Asn Gly His Thr Leu Leu Leu Tyr Asn Lys Ile Arg Asn Asn
 35 40 45
 Leu Val Leu Lys Lys Tyr Val Ser Ser Ser Ile Phe Asp Val Phe Asp
 50 55 60
 Lys Ile Lys Asp Ser Asn Asn Lys Glu His Asp Glu Thr Thr Asp Glu
 65 70 75 80
 Asn Ile Asn Lys Lys Arg Lys Pro Ser Lys Lys Val Leu Lys Leu Val
 85 90
 Asp Glu Ile Leu Asn Leu Thr Leu Ile Glu Ala Ala Asp Leu Cys Asp
 100 105 110
 Leu Cys Gln Glu Lys Leu Glu Gly Asn Gln Lys Phe Asn Asn Ser Phe
 115 120 125
 Phe Ile Asn Arg Asn Pro Phe Pro His Pro Ser Asn Phe Phe Gly Ala
 130 135 140
 Asn Gln Asn Ile Phe Pro Gln Pro Thr Ala Gln Asn Ala Met Asn Ile
 145 150 155 160
 Asn Thr Asn Leu Val Asn Asp His Thr Thr Cys Thr Thr Asp Ser Thr
 165 170 175
 Leu Tyr Ser Lys Glu Glu Lys Ser Glu Lys Lys Lys Asn Glu Glu Lys
 180 185 190
 Lys Asn Thr Lys Ser Thr Phe Asn Val Lys Leu Glu Lys Phe Asp Val
 195 200 205
 Lys Asn Lys Ile Asn Thr Ile Lys Glu Ile Arg Lys Ile Thr Asn Val
 210 215 220
 Gly Leu Lys Glu Ala Lys Asp Met Val Glu Ser Ala Pro Phe Tyr Ile
 225 230 235 240
 Gln Lys Ser Val Pro Ser Glu Lys Ala Glu Glu Met Lys Lys Ser Phe
 245 250 255
 Glu Gln Leu Gly Ala Thr Ile Ile Leu Glu
 260 265

<210> 109
 <211> 427
 <212> PRT
 <213> Plasmodium falciparum

<400> 109
 Met Glu Asp His Asp Ala Asn Val Glu Gln Trp Lys Ile Lys Arg Leu
 1 5 10 15

Ile	Lys	Lys	Leu	Glu	Asn	Ala	Lys	Gly	Asn	Gly	Thr	Ser	Met	Ile	Ser
			20					25					30		
Leu	Ile	Ile	Lys	Asn	Lys	Asp	Glu	Val	Ser	Arg	Ile	Asn	Lys	Met	Leu
		35					40					45			
Ala	Asp	Glu	Leu	Gly	Thr	Ala	Ser	Asn	Ile	Lys	Ser	Arg	Val	Asn	Arg
	50					55					60				
Leu	Ser	Val	Leu	Ser	Ala	Ile	Thr	Ser	Thr	Gln	Gln	Lys	Leu	Lys	Leu
65					70					75					80
Tyr	Asn	Lys	Thr	Pro	Pro	Lys	Gly	Leu	Val	Val	Tyr	Cys	Gly	Thr	Val
				85					90					95	
Ile	Thr	Glu	Asp	Gly	Lys	Glu	Lys	Lys	Met	Ser	Ile	Asp	Phe	Glu	Pro
			100					105					110		
Phe	Arg	Pro	Ile	Asn	Thr	Ser	Leu	Tyr	Leu	Cys	Asp	Asn	Lys	Phe	His
		115					120					125			
Val	Glu	Ala	Leu	Lys	Glu	Leu	Leu	Glu	Ser	Asp	Asp	Lys	Phe	Gly	Phe
	130					135					140				
Ile	Ile	Val	Asp	Gly	Asn	Gly	Ala	Leu	Phe	Gly	Thr	Ile	Gln	Gly	Asn
145					150					155					160
Thr	Arg	Glu	Val	Ile	Arg	Arg	Phe	Thr	Val	Asp	Leu	Pro	Lys	Lys	His
				165					170					175	
Gly	Arg	Gly	Gly	Gln	Ser	Ala	Leu	Arg	Phe	Ala	Arg	Leu	Arg	Leu	Glu
			180					185					190		
Lys	Arg	His	Asn	Tyr	Val	Arg	Lys	Val	Ala	Glu	Val	Ala	Thr	Ser	Val
		195					200					205			
Phe	Ile	Thr	Asn	Asp	Lys	Val	Asn	Val	Thr	Gly	Ile	Val	Leu	Ala	Gly
	210					215					220				
Ser	Ala	Asp	Phe	Lys	Asn	Asp	Leu	Leu	Asn	Ser	Asp	Met	Phe	Asp	Gln
225					230				235						240
Arg	Leu	Phe	Ala	Lys	Val	Ile	Lys	Ile	Val	Asp	Ile	Ser	Tyr	Gly	Gly
				245					250					255	
Asp	Asn	Gly	Phe	Asn	Gln	Ala	Ile	Glu	Leu	Ser	Ser	Glu	Ala	Leu	Gln
			260					265					270		
Asn	Val	Lys	Phe	Ile	Gln	Glu	Lys	Lys	Leu	Ile	Gly	Lys	Phe	Phe	Glu
		275					280					285			
Glu	Ile	Ala	Gln	Asp	Thr	Gly	Lys	Val	Val	Tyr	Gly	Ile	Asp	Asp	Thr
	290					295					300				
Leu	Lys	Ala	Leu	Glu	Ile	Gly	Ala	Val	Glu	Leu	Leu	Ile	Leu	Tyr	Glu
305					310					315					320
Gly	Leu	Asp	Ile	Ile	Arg	Leu	Thr	Thr	Lys	Asn	Pro	Val	Thr	Asn	Gln
				325					330					335	
Thr	Lys	Thr	Met	His	Ile	Ser	Pro	Cys	Asp	Glu	Lys	Gln	Glu	Ser	Leu
			340					345					350		
Tyr	Lys	Glu	Asn	Asn	Val	Glu	Leu	Glu	Val	Val	Glu	Lys	Ile	Ser	Leu
		355					360					365			
Thr	Asp	Trp	Val	Ile	Gly	Asn	Tyr	Lys	Lys	Tyr	Gly	Ala	Ser	Leu	Asp
	370					375					380				
Phe	Val	Thr	Asn	Lys	Ser	Gln	Glu	Gly	Ala	Gln	Phe	Gln	Lys	Gly	Phe

385 390 395 400

Gly Gly Phe Gly Gly Met Leu Arg Tyr Lys Ile Asp Leu Asn Leu Tyr
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Asp Glu Asp Val Glu Ser Asp Val Glu Leu Phe
 420 425

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 <211> 3973
 <212> PRT
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<400> 110
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Gln Gly Thr Tyr Glu Gly Tyr Glu Glu Glu Ile Lys Thr Ile Phe Glu
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Arg Arg Tyr Met Asn Ile Leu Ser Tyr Leu Cys Pro Pro Asn Lys Arg
 35 40 45

Ser Phe Glu Asp Glu Ile Ile Ser Leu Lys Ile Gln Lys Tyr Ile Asn
 50 55 60

Glu Tyr Leu Ser Phe Ser Asn Ser Thr Ser Tyr Phe Phe Gly Phe Ser
 65 70 75 80

Lys Glu Leu Ile Phe His Cys Leu Lys Ile Tyr Phe Thr Asp Ile Lys
 85 90 95

Tyr Glu Glu Val Asp Val Met Lys Ser Cys Lys His Val Ser Met Met
 100 105 110

Asp Ser Glu Asp Thr Tyr Asn Asn Asn Asn Asn Asn Asn Asp Asp
 115 120 125

Asp Asp Lys Tyr Asn Ile Glu Ser Asp Glu Glu Leu Ile Glu Arg Ile
 130 135 140

Lys Lys Asn Ala Asp Ala Leu Asn Met Glu Lys Leu His Leu Leu Tyr
 145 150 155 160

Cys Asp Glu Tyr Phe Tyr Ile Phe Lys Asn Ile Leu Tyr Val Leu Lys
 165 170 175

Arg Cys Glu Val Phe Tyr Phe Tyr Thr Asn Tyr Lys Val Glu Glu Phe
 180 185 190

Ser Tyr Glu Lys Asn Phe Leu Tyr Asp Ile Phe Tyr Ile Ile Glu Lys
 195 200 205

Lys Ile Asn Ile Gln Asp Leu Ile Gln Ile Tyr Tyr Asp Thr Tyr Lys
 210 215 220

Asp Thr Asn Asn Tyr Phe Asp Leu Leu Lys Asn Met Asp Ile Glu Asn
 225 230 235 240

Ile Val Trp Ile Tyr Lys Tyr Ile Leu Leu Phe Leu Asn Ile Gln Ile
 245 250 255

Tyr Cys Ile Asn Ile Phe Leu Tyr Leu Gln Leu Arg Leu Asn Ile Leu
 260 265 270

Ser Gln Ser Asn Ile Lys Ser Tyr Leu His Ile Phe Leu Thr Phe Pro
 275 280 285

Lys Leu Ser Leu Ser Asn Thr Tyr Met Asn Glu Asp Ile Ile Thr Ser
 290

290					295					300					
Thr 305	Leu	Gln	Gln	Lys	Glu 310	Tyr	Ser	Val	Ile	Phe 315	Phe	Ile	Cys	Ser	Leu 320
Cys	Asn	Ile	Ile	Thr 325	Tyr	Glu	Asp	Ile	His 330	Lys	Tyr	Val	Asn	Cys	Cys 335
Leu	Ser	Ile	Asn 340	Leu	Phe	Lys	Leu	Phe 345	Phe	Phe	Phe	Lys	Lys 350	Asn	Tyr
His	Thr	Asn 355	Asp	Asn	Arg	Asn	Tyr 360	Tyr	Glu	His	Asn	Ile 365	Lys	Met	Leu
Ser	Gly 370	Ser	Leu	His	Tyr	Phe 375	Leu	Asp	Ile	Leu	Lys 380	Asn	Phe	Ile	Phe
Ile 385	Asn	Asp	Asn	Phe	Val 390	Tyr	Lys	Arg	Ile	Leu 395	Ile	Gln	Ile	Leu	Glu 400
Asn	Ser	Leu	Cys	Thr 405	Tyr	Ser	Ile	Gln	Pro 410	Val	Asp	Phe	His	Asn 415	Met
Leu	Phe	Asp	Ser 420	Met	Gly	Phe	Gly	Thr 425	Pro	His	Ser	Lys	Asn 430	Glu	Asn
Glu	Asn	Glu 435	Asn	Glu	Arg	Leu	Tyr 440	Arg	Arg	Asn	Val	Glu 445	Phe	Asn	Asp
Ala	Asp 450	Ile	Tyr	Lys	Lys	Asn 455	Gly	Asn	Ile	Lys	Asn 460	Val	Asn	His	Gly
Cys 465	Asp	Glu	His	Asp	Gly 470	Asn	Val	Ser	Tyr	Phe 475	Gln	Thr	Pro	Asn	Thr 480
Thr	Asn	Asp	Tyr 485	Asn	Lys	Glu	Leu	Gln	Asn 490	Glu	Glu	Tyr	Asn	Leu 495	Asp
Val	Ser	Asn 500	Leu	Asn	Asn	Met	Phe	Glu 505	Asp	Glu	Asp	Arg	Tyr 510	Lys	Thr
Asn	Gln	Asp 515	Val	Asn	Ile	Asn	Ile 520	Asn	Ile	Ser	Leu	Val 525	Lys	Asn	Met
Lys 530	Lys	His	Ile	Glu	Gln	Lys 535	Glu	Phe	Phe	Lys	Arg 540	Asn	Ile	Asn	Lys
Asn 545	Leu	Phe	Leu	Asn	Val 550	Cys	Ile	Leu	Leu	Phe 555	Lys	Lys	Gln	Asn	Phe 560
Leu	Leu	Tyr	Thr 565	His	Asp	Ile	Lys	Lys	Glu 570	Tyr	Lys	Asn	Ile	Asn 575	Thr
Cys	Leu	Glu 580	Tyr	Leu	Gln	Asn	Asp 585	Asn	Tyr	Gln	Tyr	Asp	Ile 590	Tyr	Ser
Leu	Lys	Tyr 595	Phe	Leu	His	Asn	Tyr 600	Asp	Tyr	Lys	Glu	Thr 605	Glu	Ile	Ile
Thr 610	Asn	Phe	Lys	Glu	Lys	Glu 615	Lys	Ser	Leu	Cys	Pro 620	Phe	Ile	Ser	Val
Glu 625	Ser	Lys	Asn	Ile	Leu 630	Leu	Glu	Ile	Ser	Ser 635	Leu	Phe	Phe	Ser	Phe 640
Asp	Tyr	Leu	Lys	Ala 645	Tyr	Thr	Glu	Glu	Asn 650	Asn	Ile	Tyr	Gly	Asp 655	Asn
Asn	Lys	Lys	Asn 660	Phe	Lys	Ile	Asn	Asn	Ile 665	Tyr	Asn	Ile	Ile 670	Asp	Lys

Glu Lys Lys Lys Asn Glu Ile Lys Lys Lys Asn Asn Asn Glu Met Lys
 675 680 685
 Ile Glu Arg Lys Lys Glu Lys Asn Asn Asn Glu Met Lys Ile Glu Ile
 690 695 700
 Asn Lys Glu Lys Asn Phe Ile Asp Asn Thr Ile Leu His Pro Val Ile
 705 710 715 720
 Leu Tyr Asn Val Asn Arg Leu Leu Leu Asp Phe Phe Tyr Asp Lys Ile
 725 730 735
 Ser Lys Ala Ser Ile Gln Thr Leu Ile Ile Phe Asn His Asn Leu Leu
 740 745 750
 Ser Ile Tyr Arg Ile Leu Lys Thr Leu Ile Gly Thr Asn Thr Asn Leu
 755 760 765
 Ile Asn Phe Asn Glu Val Thr Lys Ile Val Glu Lys Leu Ala Gln Glu
 770 775 780
 Glu Gly Asn Ile Thr Lys Lys Asn His Lys Asn Ile His Met Val Ile
 785 790 795 800
 Leu Glu Asp Thr Leu Tyr Tyr Lys Ile Ile Tyr Ile Leu Arg Lys Lys
 805 810 815
 Asn Ile Asn Lys Asp Thr Ile Tyr Ile Thr Tyr Ile Glu Tyr Tyr Tyr
 820 825 830
 Ile Leu Leu Asp Tyr Phe Cys Lys Tyr Phe Tyr Asn Asn Met Asp Asn
 835 840 845
 Tyr Phe Lys Tyr Asn Tyr Met Lys Lys Ser Thr Val Arg Lys Lys Tyr
 850 855 860
 Val Lys Asn Lys Asn Ile Asn Asp Thr Lys Gly His Asn Lys Asn Asn
 865 870 875 880
 Asn Asn Asn Asn Asn Ile Tyr Gly Asp Asp Asp Asp Asn Asn Ile Tyr
 885 890 895
 Cys His Asp Asp Asp Asp Ile Tyr Cys His Asp Asp Asp Asp Ile Tyr
 900 905 910
 Cys His Asp Asp Asp Asp Asn Ile Phe Ile Phe Phe Glu Lys Ile
 915 920 925
 Val Ile Phe Phe Cys Asn Ile Leu Gln Ile Asn Lys Cys Phe His Ile
 930 935 940
 Leu Ile Glu Ile Lys Leu Asn Tyr Tyr Phe Lys Ile Pro Tyr Asp Ile
 945 950 955 960
 Lys Asn Thr Phe Ile Asn Leu Phe Thr Tyr Leu Phe Phe Phe Ser Leu
 965 970 975
 Lys Val Gln Glu Phe Ser Arg Phe Gln Ile Met Ile Val Arg Cys Leu
 980 985 990
 Ser Phe Leu Leu Lys Lys Lys Asn Ile Asn Lys Leu Asn Ala Tyr Ile
 995 1000 1005
 Phe Gln Leu Phe Ser Tyr Leu Glu Asn Asp Gln Ile Asn Ile Asn Glu
 1010 1015 1020
 Lys Gly Met Val His Arg Lys Ser Ser Lys Tyr His Arg Asn Asn Gln
 1025 1030 1035 1040

Glu Glu Tyr Ser His Asn Asn Lys Thr Asn Asp Asn Ser Val Ser Asn
 1045 1050 1055
 Leu Tyr Arg Asp Ile Glu Asn Glu Tyr Asp Glu Asn His Leu Glu Arg
 1060 1065 1070
 Arg Lys Asp Arg Asn Val Phe Ser Ser Asn Met Asn Asp Asp Lys Lys
 1075 1080 1085
 Tyr Asn Asn Leu Ser Asp Phe Lys Tyr Thr Lys Glu Asn Met Asp Ile
 1090 1095 1100
 Lys Glu Asn Phe Arg Ile Asp Ile Ser Phe Leu Lys Ile Phe Phe Leu
 1105 1110 1115 1120
 Leu Asn Asp Val Arg Gln Ile Asn Leu Asn Glu Ser Asn Gly Arg Lys
 1125 1130 1135
 Asp Lys Leu Glu Ser Lys Ala Lys Arg Arg Ile Gln Lys Leu Asp Val
 1140 1145 1150
 His Arg Tyr Thr Tyr Asn Glu Asn Asp Asn Asn Lys Tyr Asn Asp Gly
 1155 1160 1165
 Asn Thr Phe Leu Ser Ser Gln Asp Glu Glu Lys Ser Lys Ser Phe Asp
 1170 1175 1180
 Ser Ser Asp Ser Cys Ser Val Asp Glu Lys Glu Ser Ser Lys Gly Leu
 1185 1190 1195 1200
 Tyr Gly Asn Asp Phe Val Asn Ser Ser Asp His Asn Asn Asn Ser Ser
 1205 1210 1215
 Asn Asn Ser Ser Asn Asn Ser Ser Asn Asn Ser Ser Asn Asn Ser Ser
 1220 1225 1230
 Ser Gly Arg Asn Asn Ser Ser Asp Glu Val Val Val Asp Pro Tyr Asp
 1235 1240 1245
 Tyr Asn Asn Tyr Tyr Glu Cys Lys Asp Ser Asn Lys Phe Gly Val Val
 1250 1255 1260
 Val Asn Tyr Phe Tyr Ala His Leu Pro Asn Phe Glu Lys Ser Tyr Asn
 1265 1270 1275 1280
 Ile Asn Tyr Val Val Glu Asp Ile Ser Phe Asp Asp Ile Phe Leu Ile
 1285 1290 1295
 Ser Ile Met Asp Leu Trp Glu Thr Asn Asn Asn Asn Asn Leu Leu Asn
 1300 1305 1310
 Leu Ile Asn Asp Leu Leu Lys Ile Tyr Glu Glu Glu Lys Lys Lys Lys
 1315 1320 1325
 Ile Tyr Ile Cys Thr Ser Leu Leu Leu Lys Ile Phe Lys Arg Ile Ile
 1330 1335 1340
 Lys Lys Lys Ser Asn Ser Tyr Phe Leu Phe Asn Ile Tyr Lys Ala Phe
 1345 1350 1355 1360
 Glu Asn Asp Ile Lys Leu Ile Leu Asp Ser Ile Asn Ile Leu Ile Lys
 1365 1370 1375
 Lys Trp Val Val Trp Thr Phe Lys Asn Cys Asp Asn Ile Phe Asn Arg
 1380 1385 1390
 Glu Lys Asn Ile Asn Ile Lys Lys Leu Val Lys Leu Phe Phe Ile Ser
 1395 1400 1405
 Phe Tyr Lys Tyr Leu Lys Asn Tyr Phe Leu Gln Ile Tyr Tyr His Phe

1410	1415	1420
Phe Tyr Asn Asn Gln Ile Tyr Asn Arg Lys Asn Tyr Asn Phe Asp Asn 1425 1430 1435 1440		
Phe Phe Phe Ser Ile Phe Ser Lys Tyr Ile Asn Lys Ile Phe Val Glu 1445 1450 1455		
Ile Tyr Ser Ser Ser Ser Ser Ser Thr Ser Ser Asn Ser Ser Phe Val 1460 1465 1470		
Phe Asn Val Ser Lys Phe Tyr Met Met Lys Met Cys Ile Ser Ile Ile 1475 1480 1485		
Asn Asn Met Ile Gly Val Val Lys Tyr Ile Asn Leu Glu Arg Val Lys 1490 1495 1500		
Gln Val Phe Tyr Glu His Asn Ile Met Met Asp Val His Met Lys Ser 1505 1510 1515 1520		
His Leu His His Asp Ile Asp Val Tyr Tyr Gly His Asp Asn Ser Tyr 1525 1530 1535		
Asn Asn Ile Tyr Gln Lys Ile Ile Lys Ser Tyr Arg Gly Glu Glu Lys 1540 1545 1550		
Asp Thr Leu Asp Val Ile Asn Thr Glu Ser Val His Gln Asn Arg Asn 1555 1560 1565		
Glu Asp Asp Ile Asp Gly Ser Ile Asn Ser Leu Asp Val Phe Asn Glu 1570 1575 1580		
Ile Met Arg Asn Ile Ile Ile Asn His Asn Ser Leu Ile Lys Asp His 1585 1590 1595 1600		
Asn Asp Met Cys Thr Lys Lys Lys Arg Ile Asn Ile Phe Gln Ile Ser 1605 1610 1615		
Ser Pro Ala Thr Ser Glu Gln Leu Met Asn Asn His Tyr Thr Met Asn 1620 1625 1630		
Tyr Leu Thr Asp Val Met Leu Leu Gln Lys Asp Tyr Ile Tyr Asn Ile 1635 1640 1645		
Asp Asn Asn Met Asn Glu His Lys Gln Asn Val Phe Asn Lys Pro Phe 1650 1655 1660		
Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn Phe Met Leu Asn Tyr 1665 1670 1675 1680		
Phe Asn Tyr Ile Pro Glu Asn Asn Asn Asn Asn Tyr Arg Met Asp Ile 1685 1690 1695		
Lys Lys Arg Tyr Pro Pro Glu Ser Tyr Asp Asn Asn Tyr Tyr Met Phe 1700 1705 1710		
Asn Asn Ile Lys Asn Glu Glu Glu Asn Ile Leu Leu Gln Asn Asn Ser 1715 1720 1725		
Met Ser Ser Ser Ile Tyr Ile Asp Lys Lys Leu Met Lys Asp Thr Lys 1730 1735 1740		
Glu Met Glu Pro Leu Phe Asn Lys Thr Lys Asp Met Lys Asn Tyr Asn 1745 1750 1755 1760		
Glu Glu Gln Lys Asn Asn Glu Leu Ile Ser Tyr Pro Tyr Asn Asn Met 1765 1770 1775		
Leu Gln Asn Asn Ile Ile Phe Val Lys Phe Phe Leu Tyr Thr Gln Asn 1780 1785 1790		

Leu Leu Gln Ile Ile Phe Gln Asn Asn Tyr Ile Phe Phe Leu Ser Asp
 1795 1800 1805
 Phe Leu Phe Ile Asn Tyr Lys Lys Lys Glu Tyr Ile Glu Glu Lys Lys
 1810 1815 1820
 Asn Gly Asn Gln Asn Val Ile Asn Ile Lys Asp Glu Asp Lys His Ile
 1825 1830 1835 1840
 Thr Asn Ile Lys Asp Gly Asp Lys His Ile Thr Asn Ile Lys Asp Gly
 1845 1850 1855
 Asp Lys Asn Ile Thr Asn Ile Lys Asp Asp Asp Lys Asn Ile Thr Asn
 1860 1865 1870
 Met Lys Lys Lys Asn Asn Lys Asn Tyr Leu Thr Ile Leu Met Tyr Asn
 1875 1880 1885
 Ser Gln Glu Cys Ser Phe Tyr Tyr Ser Ile Phe Asn Thr Leu Ile Asn
 1890 1895 1900
 Asp Tyr Asn Phe Leu Tyr Tyr Lys Asp Tyr Lys Ser Ser Cys Phe Leu
 1905 1910 1915 1920
 Tyr Glu Ser Leu Asn Thr Phe Phe Lys Ile Asn Asn Phe Asn Asn Ile
 1925 1930 1935
 Tyr Phe Leu Cys Lys Tyr Ser Ser Gly Tyr Leu Pro Leu Glu Arg Ile
 1940 1945 1950
 Ile Lys Leu Phe Met Asp Val Ile Phe Gly His Phe Ile Lys Phe Ile
 1955 1960 1965
 Asn Ile Asn Glu Asn Ile Asn Asp Tyr Glu Leu Leu Glu Val Leu Glu
 1970 1975 1980
 Tyr Asn Gly Asn Lys Cys Tyr Glu Leu Leu Arg Phe Leu Phe Phe Phe
 1985 1990 1995 2000
 Ile Lys Gln Asn Asp Leu Ile Thr Ile Asn Ile Tyr Lys Tyr Ile Phe
 2005 2010 2015
 Asp Ile Ile Met Cys Ile Leu Glu Gln Tyr Ile Ala His Val Asn Tyr
 2020 2025 2030
 Tyr Ile Tyr Lys Gly Lys Ala Trp Asp Val Phe Phe Asn Lys Leu Lys
 2035 2040 2045
 Ile Leu Asn Leu Ser Leu His Phe Val Asn Ser Ile Tyr Phe Asn Ile
 2050 2055 2060
 Phe Cys Asp Asp Ile Asn Ala Glu Ile Lys Arg Glu Asn Asp Asn Asn
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 Lys Ser Asn Asp Asn Asn Asn Lys Asn Asn His Asn Asn Asn Asn Asn
 2085 2090 2095
 Lys Asn Asn His Asn Asn Asn Asn Asn Lys Asn Asn Glu Lys Thr Gln
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 Asn Val Asp Glu Gln Arg Arg Ser Arg Leu Trp Asn Ile Val Glu Cys
 2115 2120 2125
 Leu Phe Tyr Asn Val Ile Asn Lys Leu His Val Asn Ser Ile Asn Cys
 2130 2135 2140
 Leu Lys Lys Asn Lys Leu Gly Ser Tyr Lys Cys Asp Glu Glu Phe Pro
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Lys Glu Leu Asn Cys Lys Arg Tyr Phe Leu Asn Tyr Asn Lys Asp Phe
 2165 2170 2175
 Lys Lys Glu Ile Tyr Tyr Tyr Leu Tyr Asn Leu Asn Ile Ala Ser Glu
 2180 2185 2190
 Ile Phe Glu Leu Ile Ile Lys Ala Ile Tyr Ile Asn Glu Thr Lys Ile
 2195 2200 2205
 Tyr Pro Leu Ile Ile Asn Ile Cys Tyr Asp Arg Asn Ile Ser Asn Ile
 2210 2215 2220
 Phe Phe Asn Ile Asp Tyr Asp Asn Leu Asn Ser Ile Leu Glu Lys Tyr
 2225 2230 2235 2240
 Thr Tyr Leu His Lys Lys Lys Lys Asp His Ile Lys Asn Leu Lys Tyr
 2245 2250 2255
 Leu Leu Cys Lys Asn Lys Ser Ile His Met His Lys Tyr Ile Ser Tyr
 2260 2265 2270
 Ile Asp Asp Asp His Leu Ile Asn Asn Met Leu His Leu Leu Arg Arg
 2275 2280 2285
 Lys Asn Ile Tyr Tyr Lys Tyr Val Leu Asn Ile Asn Glu Tyr Asn Asn
 2290 2295 2300
 Phe Leu Asp Asn His Lys Cys Lys Arg Lys Arg Lys Phe Ile Asn Tyr
 2305 2310 2315 2320
 Asn Asn Ile Gln Ser Ser Tyr Asn Asn Asn Tyr Asn Ile Tyr Asn Asn
 2325 2330 2335
 Thr Asn Asn Phe Tyr Glu Tyr His Asp Tyr Ile Ala Ile Lys Asn Ile
 2340 2345 2350
 Leu His Lys Lys Ile Glu Leu Leu Asp Asp Asp Tyr Ile Cys Ser Arg
 2355 2360 2365
 Ile Leu Asp Thr Gln Ser Gln Lys Thr Tyr Gly Glu Lys Asn Tyr Leu
 2370 2375 2380
 Phe Asp Val Lys Asn Tyr Ile Tyr Asn Met Asn Phe Ile Asn Asn Asn
 2385 2390 2395 2400
 Tyr Gln Glu Asn Ser Tyr Ile Asn Asp Val Ile Asn Gly Lys Lys Lys
 2405 2410 2415
 Met Phe Thr Leu Gln Ile Ser Glu Tyr Asp Lys His Thr Asn Tyr Asn
 2420 2425 2430
 Ser Leu Phe Met Asp Cys Val Gln Asn His His Asn Ile Lys Lys Met
 2435 2440 2445
 Asn Ser Thr Asn Asn Met Asn His His Ile Asn Thr Asn Asn Asn Tyr
 2450 2455 2460
 Leu His Asn His Asn Phe Ile Ser Asn Tyr Asn Ser Phe Asn Val His
 2465 2470 2475 2480
 Asp Asn Lys Lys Ile Tyr Ser Tyr Asn Glu Asn Cys Lys Ser Asp Glu
 2485 2490 2495
 Ile Met Gln Lys Lys Ile Asp Met Ser Ile Trp Lys Asn Ile Asp Ser
 2500 2505 2510
 Ile Phe Pro Glu Thr Phe Ile Asp Ser Asp Lys Gln Pro Ala Tyr Asn
 2515 2520 2525
 Phe Asp Pro Ile Asp Ser Ile Asn Leu Gly Ser Ser Arg Ser Asn Asn
 231

2530	2535	2540
Glu Lys Lys Lys Lys Tyr Ile Gln Ile Asp Asn Pro Val Lys Lys Glu 2545	2550	2555
Cys Leu Leu Leu Asn Ile Asn Tyr Asp Lys His Asp Ser Ile Val Tyr 2565	2570	2575
Asn Lys Tyr Asp Asn Met Phe His Tyr Asp Glu Leu Pro Asp Ile Asn 2580	2585	2590
Asn Asn Asn Asn Asn Asn Asn Asn Asp Asn Asn Asn Asn Thr Cys Val 2595	2600	2605
Ile Glu Asp Ile Lys Asp Ile Tyr Glu Lys Arg Met Asn Lys Asn Thr 2610	2615	2620
Lys Arg Asn Lys Glu Lys Lys Glu Lys Arg Lys Tyr Ile Phe Leu Asn 2625	2630	2635
Asn Phe Asn Asn Asn Lys Glu Lys Lys Met Lys Asn Asn Gln Lys Thr 2645	2650	2655
Val Tyr Ser Asn Asn Asn Ile Met Gly Glu Glu Phe Tyr Asn Glu Phe 2660	2665	2670
Tyr Leu His Asn Phe Lys Asn Glu Ile Lys Cys Met Lys Tyr Ile Asn 2675	2680	2685
Leu Thr Gln Ser Leu Tyr Asp Val Lys Tyr Arg Leu Leu Leu Leu Phe 2690	2695	2700
Tyr Lys Phe Ile Ile Ile Leu Lys His Lys Glu Leu Leu Gln Asn Glu 2705	2710	2715
Asn Tyr Ile Lys Glu Glu Lys Glu Phe Leu Lys Lys His His Ile Lys 2725	2730	2735
Lys Asn Ile Pro Phe Leu Phe Phe Ile Tyr Glu Leu Met Ile Thr Phe 2740	2745	2750
Phe Asn Thr Ala Glu Asn Ile Asn Lys Asn Thr Tyr Tyr Tyr Val Leu 2755	2760	2765
Ile Ile Asn Ile Leu Val Asn Leu Phe Leu Phe Ile Asn Lys Arg Asp 2770	2775	2780
Tyr Asp Asp Glu Thr Cys Met Ser Asn Ile Ile Asn Asn Asp Asn Asn 2785	2790	2795
Lys Lys Asn Lys Asn Asn Leu Ile Glu Asn Lys Asn Glu Ile Tyr Asn 2805	2810	2815
Thr Asn Ile Lys Ser Leu Lys Asn Asp Lys Glu Tyr Ile Asp Asn His 2820	2825	2830
Ser Asn Tyr Ala Met Phe Tyr Cys Asp Leu Phe Cys Asp Asp Phe Phe 2835	2840	2845
Ile Ser Asn Gly Lys Lys Asn Lys Glu Asn Val Val Phe His Thr Leu 2850	2855	2860
His Asn Met Ser His Lys Glu Met Ser Lys Tyr Asp Leu Ile Gly Lys 2865	2870	2875
Asn Lys Tyr Leu Glu Asn Tyr Ile Asn Asn Leu Ile Leu Glu Lys Lys 2885	2890	2895
Lys Lys Ile Asn Asn Leu Asn Val His Ile Asn Lys Lys Met Asp Asn 2900	2905	2910

Asn Ile Leu Tyr Ser Phe Ile Asn Arg Ile Asn Glu Thr Arg Asp Asn
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 Thr Lys Lys Lys Asn Lys Leu Tyr Ile Arg Arg Tyr Tyr Leu Lys Lys
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 Ser Ile Lys Tyr Asn Asn His Leu Tyr Asn Met Pro Ile Phe Leu Ser
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 Leu Phe Leu Arg Cys Val Thr Ile His Leu His Tyr Phe Lys Phe Tyr
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 Leu Phe Val Asn Met Leu Glu Leu Phe Tyr Val Phe Ile Gln Ile Tyr
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 His Val Gln Arg Asp Gln Arg Cys Leu Asn Asn Asn Lys Asn Lys Ser
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 Glu Asp Asn Glu Lys Ile Tyr Cys Thr Asn Asn Asn Gly Asp Gly Tyr
 3060 3065 3070
 Asp Asp Asp Gly Tyr Gly Glu Lys Asn Val Ser Gly Ile Tyr Lys Glu
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 Leu Leu Tyr Phe Leu Tyr Asn Arg Ile Asn Thr Ile Tyr Glu Leu Phe
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 Tyr Asn Phe Tyr Phe Thr Tyr Leu Arg Lys Lys Glu Asn Asn Asn Asp
 3170 3175 3180
 Ile Leu Leu Asp Ile Val Asn Glu His Ile Tyr Asn Leu Ile Gly Asn
 3185 3190 3195 3200
 Lys Ile Tyr Asp Gln Ile Asn Lys Ile Asn Asn Phe Leu Asp Asp Lys
 3205 3210 3215
 Gln Tyr Tyr Tyr Phe Tyr Ile Asn Thr Leu Thr Phe Ile Thr Leu Asn
 3220 3225 3230
 Lys Gln Ile Cys Ile Tyr Ile Ile Lys Lys Lys Ile Leu Asn Lys Leu
 3235 3240 3245
 Ile Tyr Ile Pro Phe Ile Tyr His Ser Leu Phe Asp Lys Asn Lys Asn
 3250 3255 3260
 Phe Thr Ser Ile Tyr His Ile Asn Asn Asn Gln Tyr Ile Arg Asn Lys
 3265 3270 3275 3280

Asp His Ile Ile Phe Cys Ser Leu Ile Val Phe Ile Ile Lys Leu Leu
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 Tyr Val Phe Val Lys Asn Phe Lys His Lys Asn Val Asn Phe Asn Asn
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 His Gln Asn Asn Lys Asn His Glu Asn Val Asn Thr Asn Val Gly His
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 Val Phe His Ser Ser Phe Ile Ser Glu Asn Pro Tyr Tyr His Val Thr
 3330 3335 3340
 Lys His Leu Asp Tyr Tyr Asn Asp His Thr Phe Met Glu Ser Met Lys
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 Val Ala Thr Asn Arg Ile Tyr Glu Asn Pro Tyr Tyr Arg Asn Tyr Asn
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 Lys Glu Pro Tyr Thr Ser Asn Glu His Lys Ile Leu Asn Ser Asn Met
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 His Asn Asp Ala Tyr Asn His Asn Asp Ala Tyr Asn His Asn Asp Ala
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 Asp Ala Asp Asn His Asn Asp Thr Asp Asn His Ser Asp Asn Tyr Asn
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 Ser His Lys Tyr Lys Gly Thr Tyr Lys Ile Tyr Arg Ile His Asp Glu
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 Glu Asp Ile Ile Gln Asp Asn Asn Tyr Thr Asn Asp Asp Tyr Val Asn
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 Thr Asn Tyr Asn Phe His Gln Asn Asn Asn Tyr Gln Asn Ser Ser Lys
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 Asp Asn Ser His Thr Tyr Thr Ser Ser Gly Asp Asp Asn Leu Asn Asn
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 Pro Phe Ile Ser Leu Asn Lys Glu Asn Ile Ser Lys Lys Lys Lys Asn
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 Lys Lys Thr Asn Lys Asn Arg Glu Glu Glu Lys Lys Lys Lys Asn Glu
 3585 3590 3595 3600
 Ile Ile His Asn Glu Val Glu Tyr Phe Leu Glu Ala Ile Leu Asn Val
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 Val Gly Lys Leu Ser Asp Arg Ile Asn Phe Ile Phe Leu Lys Ile Glu
 3620 3625 3630
 Lys Ile Asn Cys Leu Ala Ile Phe Glu Glu Ser Tyr Leu Tyr Val Glu
 3635 3640 3645

3650 3655 3660
 Phe Leu Ile Ser Leu Met Asp Lys Arg Val Glu His His Leu Phe Tyr
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 Ile Asn Arg Ile Leu Glu Lys Phe Ile Tyr Glu Lys Glu Val Ile Ile
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 Tyr Pro Tyr Ser Pro Tyr Glu Ile Asn Ala Ser Thr Asn Val Pro Asn
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 Asn Gln Asp Lys Lys Lys Lys Lys Lys Ser Thr Lys Asn Glu Leu Thr
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 Leu Phe Thr Gln Arg Val Leu Tyr Ile Cys Tyr Lys Ser Ile Leu Asn
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 Tyr Asn Thr Ile Leu Leu Asn Leu Ile Gln Thr Pro Tyr Phe Lys Asn
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 Ser His Phe Val Ile His Leu Tyr Ile Leu Ile Leu Lys Ser Thr Arg
 3765 3770 3775
 Leu Val Thr Asn Ile Ile Glu His Phe Gly Lys Lys Asn Thr Thr Leu
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 Ile Arg Thr Val Ile Arg Ile Ile Arg Ile Val Leu Ser Asn Asp Asn
 3795 3800 3805
 Asn Ser Tyr Val Pro Ile Cys Leu Asp Ile Leu Asn Thr Glu Lys Glu
 3810 3815 3820
 Lys Lys Lys Glu Lys Ile His Tyr Thr Arg Gly Val Gly Lys Ser Asn
 3825 3830 3835 3840
 Phe Thr Tyr Tyr Leu Ser Asp Ser Asn Thr Arg Ser Glu Glu Ser Ala
 3845 3850 3855
 Tyr Pro Gly Glu Ile Ile Gln Tyr Asn Lys Ser Ile Asp Glu Tyr Ile
 3860 3865 3870
 Asn Thr Lys Arg Val Tyr Lys Asn Asp His Leu Phe Asn Phe Leu Pro
 3875 3880 3885
 Glu Ile Ile Ser Leu Lys Thr Tyr Tyr Asn Ile Leu Lys Glu Ile Leu
 3890 3895 3900
 Glu Arg Ser Ala Phe Leu Gly Ala Phe Val Leu Asp Lys Leu Lys Asn
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 Ser Asp Glu Asp Ser Cys Leu Lys Gln Ile Leu Val Ser Asn Ile Phe
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 Ser Tyr Leu Ile His Ile Asn Ala Thr Leu Leu Pro Ser Asn Ile Cys
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<400> 111
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Ile Asn Ser Asp Leu Asp Val Asp Arg Lys Lys His Ser Asp Asn Val	35	40	45
Tyr Glu Glu Ser Glu Gln Asp Gly Lys Gln Thr Glu Gly Arg Lys Lys	50	55	60
Ile Lys Gly Phe Phe Lys Leu Lys Lys Gly Asp Ser Glu Asp Glu Asn	65	70	75
Lys Glu Lys Glu Thr Lys Asp His Arg Leu Lys Asp Gly Gly Asp Thr	85	90	95
Phe Glu Glu Asn Ile Asn Val Leu Lys Lys Lys Lys Lys Lys Lys Asn	100	105	110
Ser Asp Thr Ile Asn Tyr Asn Lys Lys Tyr Phe Asn Lys Asn Lys His	115	120	125
Asn Gly Ser Ser Ser Asn Glu His Ser Ser Tyr Ser Asp Glu Asn Phe	130	135	140
Phe Glu Ala Ala Lys Arg Asn Lys Ile Leu Asn Glu Glu Ile Tyr Lys	145	150	155
Asn Lys Asp Asn Glu Asp Met Met Cys Asp Met Ser Ile Phe Asn Asp	165	170	175
Asp Asn Asn Met Asp Asp Ser Leu Phe Asn Lys Asn Glu Asp Asn Asn	180	185	190
Arg Tyr Asp Glu Glu Glu Met Lys Lys Tyr Lys Arg Lys Gly Lys Arg	195	200	205
Tyr Ser Ser Asp Ser Tyr Lys Asp Asp Ser Pro Gln Tyr Met Ser Glu	210	215	220
Arg Tyr Ser Ser Glu Lys Tyr Ser Ser Glu Lys Tyr Ser Ser Glu Lys	225	230	235
Tyr Ser Ser Glu Lys Tyr Ser Ser Ser Asn Arg Asn Gln Ser Thr Asn	245	250	255
Leu Leu Asn Asn Ile Lys Asn Phe Cys Asn Thr Tyr Ile Ile Asn Lys	260	265	270
Lys Lys Asp Arg Ser Arg Asp Thr Tyr Glu Asp Glu Glu Ser Arg Glu	275	280	285
Gly Ala Tyr Gly Glu Asn Thr Thr Glu Asp Leu Asn Glu Asp Thr Gln	290	295	300
Glu Gly His Lys Asn Lys Lys Lys Glu Ile Leu Met Asn Ile Leu Tyr	305	310	315
Asn Asp Ile Asn Ile Lys Lys Asn Asp Glu Lys Asp Phe Phe Met Asp	325	330	335
Arg Asn Phe Lys Gly Lys Lys Lys Glu Ile Asp Ile Lys Lys Asn Gln	340	345	350
Gln Val Met Lys Asn Met Leu Asn Ile Lys Asn Asn Glu Asn Ile Asp	355	360	365
Val Tyr Asn Asp Lys Asp Asn Phe Ile Asn Ile Asp Asp Lys Cys Pro	370	375	380

Ser Gly Tyr Phe Lys Asp Lys Ile Lys Glu Tyr Asp Tyr Leu Asp Asn
 385 390 395 400
 Glu Lys Gln Lys Asn Val Asn Lys Met Ile His Pro Lys Asp Gly Asn
 405 410 415
 Asn Asn Asn Asn Asn Asn Ile Leu Leu Ser Gln Asn Ser Ser Thr Ile
 420 425 430
 Leu Ser His Val Val Gln Glu Asp Tyr Ala Asp Gly Ile Lys Lys Phe
 435 440 445
 Asn Lys Asn Ser Phe Tyr Asn Asn Leu Glu Asn Arg Lys Leu Ile Asn
 450 455 460
 Ile Asn Asn Ile Tyr Asp Lys Tyr Lys Ile Ile Leu Ser Glu Ile Lys
 465 470 475 480
 Ser Gly Asp His Leu Asn Asn Val Glu Lys Lys Leu Asn Val Ile Glu
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 Asn Ser Leu Leu Cys Ile Phe Asp Leu Gln Asp Gly Asp Asn Asn Asn
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 Asn Ile Asn Asp Asp Asp Asp Asn Asp Asp Asp Gly His His Asp Asp
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 Gly His His Asp His Val Gly Asn Asn Met Lys Gly Asp Lys Leu Asp
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 Ile Lys Lys Arg Phe Ser Glu Leu Phe Asp Asp Ala Leu Asn Thr Leu
 545 550 555 560
 Ile Glu Asn Tyr Glu Asp Val Lys Lys Lys Glu His Ser Glu Asn Ile
 565 570 575
 Asn Lys Lys Ala Gln Leu Asn Leu Ser Cys Asp Phe Asn Leu Tyr Leu
 580 585 590
 Arg Ile Cys Lys Val Val Leu Asn Asp Glu Lys His Ile His Thr Ser
 595 600 605
 Asn Lys Lys Asn Met Leu Tyr Tyr Asn Asn Ile Tyr Lys Ile Asn Tyr
 610 615 620
 Ile Lys Ser Asn Asn Lys Asn Lys Asp Ile Leu Tyr Asn Ile His Cys
 625 630 635 640
 Arg Asn Ile His Leu Tyr Leu Ile Leu Ser Ser His Glu Gly Ile Glu
 645 650 655
 Arg Lys Lys Gln Gln Met His Ile Leu Lys Asp Lys Asp Lys Asp Lys
 660 665 670
 Asn Lys Asn Lys Asp Lys Asn Lys Asn Lys Glu Asn Ile Leu Asn Glu
 675 680 685
 Asn Ile Arg Lys Ile Gln Lys Gln Asn Lys Lys Gln Asn Gln Asn Phe
 690 695 700
 Ile Asp Ile Asp Asn Ile Tyr Tyr Thr Asn Lys Leu Arg Asn Ile Asn
 705 710 715 720
 Asn Val Asn Asp Met Asn Asp Met Tyr His Ile His Asn Asp Glu Asn
 725 730 735
 Asp Val Ile Asn Gln Lys Leu Tyr Tyr Asp Glu Ile Asp Tyr Thr Lys
 740 745 750

Lys Gly Ile Leu Asp Lys Ile His Val Leu Trp Phe Tyr Glu Lys Lys
 755 760 765
 Asn Glu Val His Tyr Leu His Leu Tyr Asn Leu Asn Asn Ile Asn Ser
 770 775 780
 Lys Met Leu Ser Ile Ile Ile Asp Gly Tyr Leu Glu Cys Ile Asp Val
 785 790 795 800
 Val Tyr Leu Asn Asn Phe Phe Pro Leu Glu Ser Phe Tyr Asn Ser Val
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 Lys Asn Tyr Tyr Leu Met Leu Ile Thr Glu Asn Ser Phe Tyr Phe Phe
 820 825 830
 Asn Ile His Leu Tyr Phe Asn Cys Glu Glu Asp Tyr Asn Ile Ser Glu
 835 840 845
 Asn Glu Lys Leu Ile Tyr Gln Asn Ile Tyr Pro Phe Tyr Phe Asn Ile
 850 855 860
 Tyr Leu Phe Leu Leu Phe Lys Val Pro Lys Asp Ser Lys Met Lys Phe
 865 870 875 880
 Glu Tyr Ile Arg Ser His Glu Lys Ser Glu Arg Ile Phe Leu Val Val
 885 890 895
 Asn Asp Gly Asn Val Tyr Glu Phe Ile Tyr Glu Lys Lys Asn Leu Phe
 900 905 910
 Glu Pro Phe Asn Ile Phe Lys Asn Ile Ile Val Asn Ser Ile Ser Ser
 915 920 925
 Leu Ile Asn Val Val Asn Glu Lys Ile Phe His His Ser Arg Asn Tyr
 930 935 940
 Met Ile Glu His Thr Ala Asn Asp Asp Asn Ser Ser Phe Asn Tyr Tyr
 945 950 955 960
 Asp Asn Gly Lys Ser Ser Ile Asn Ser Tyr Asn Ile Ser Asn Thr Tyr
 965 970 975
 Pro Glu Tyr Met Asp Asn Lys Ser Phe Ile Asp Glu Tyr Asn Lys Asn
 980 985 990
 Ile Tyr Cys Asp Asp Leu His Asp Tyr Pro Ile Lys Phe Tyr Leu Lys
 995 1000 1005
 Lys Ile Ile Ser Thr Tyr Phe Ile Lys Tyr Phe Ala Phe Phe Lys Asn
 1010 1015 1020
 Lys Val Lys Lys Ile Ile Ile Asp Asn Glu Arg Ser Ile Leu Tyr Val
 1025 1030 1035 1040
 Leu Tyr Glu Asn Ser Asp Leu Tyr Val Lys Leu Leu Ser Asn Arg Ala
 1045 1050 1055
 Asp Val Asn Asn Lys Lys Lys Asn Tyr Leu Ser Asp Thr Ile Ile Phe
 1060 1065 1070
 Thr Lys Gly Glu Leu Ile Lys Glu Leu Asn Asn Ile Tyr Phe Ile Asp
 1075 1080 1085
 Asp Met Asn Ile Leu Tyr Asn Asp Met Tyr Asn Met Asn Asn Ile Asn
 1090 1095 1100
 Asn Met Val Asn Met Asn Asn Ile Asn Asn Met Val Asn Met Asn Asn
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 Met Asn Asn Met Asn Asn Met Val Asn Met His Asn Met Val Asn Met

1125										1130										1135									
His	Asn	Met	Val	Asn	Met	His	Asn	Met	His	Asn	Met	His	Asn	Met	His	Asn	Met	His	Asn	Met	His	Asn	Met	His	Asn	Met	His		
1140										1145										1150									
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Gly	Phe	Ala	His	Asn	Asn	Ile	Asp	Pro	Thr	Thr	Phe	His	Lys	Leu	Asn														
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Ile	Ile	Asp	Ile	His	Ile	Asn	His	Ile	His	Glu	Arg	Asn	Asn	Ile	Phe														
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Val	Ile	Phe	Thr	His	His	Leu	Lys	Asn	Leu	Tyr	Ile	Ile	Leu	Lys	Lys														
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1475										1480										1485									
Tyr	Lys	Leu	Lys	Leu	Leu	Thr	Cys	Ala	Asp	Asp	Ile	Gly	Asn	Thr	Asn														
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Gln Met Ser Ser Ser Asn Lys Asn Lys Phe Ile Phe Lys Gln Ile Asn
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 Glu Tyr Tyr Ile Asn Glu Glu Ile Ile Gly Val Ile Tyr Lys Lys Lys
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 Asn Tyr Tyr Phe His Glu Phe Phe Glu His Thr Glu Asn Asp Asn Ile
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 Leu Lys Asp Phe Tyr Val Asn Lys Met Lys Gln Asp Asn Ile Ser Asn
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 Ile Pro Pro Phe Tyr Leu Tyr Glu Asn Thr Val Ser Glu Tyr Gln Glu
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 Lys Asn Thr Arg Thr Gln Lys Ile Glu Lys Met Ile Asn Asn Tyr Leu
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 Lys Glu Ile Lys Ile Lys Glu Tyr Gly Lys Lys Asn Gln Glu Asp Phe
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 1795 1800 1805
 Pro Ile Asp Ile Pro Pro Ser Pro Thr Ser Leu Ile Lys Glu Lys Asn
 1810 1815 1820
 Glu Tyr Glu Glu Ile Tyr Glu Tyr Phe Ile Asn Gln Ile Ile Glu Ile
 1825 1830 1835 1840
 Ser Ser Thr Glu Glu Phe Leu Phe Ile Ile Trp Ser Ile Leu Leu Asn
 1845 1850 1855
 His Val Tyr Lys Tyr Glu Ile Met Cys Phe Ser Asn Ile Gln Ser Ser
 1860 1865 1870

Asn Gln Arg Asp Ile Lys Asn Lys Leu Asn Asp Asp Lys Ser Lys¹⁸⁸⁵ Arg
 1875 1880
 Asn Met Asp Ala Ile His Asn Met Asp Asn Thr Asn Tyr Tyr Asn Ser
 1890 1895 1900
 Tyr Gly Ile Pro Arg Met Ser Met Asn Ile Ala Gly Ser Ser Thr Gly
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 Gln Asn Glu Asp Glu Gln Asn Met Phe Glu Asn Ser Tyr Ile Lys Lys
 1955 1960 1965
 Asp Trp Asn Asn Tyr Asn Asn Asn Asn Asn Asn Val Asp Tyr Asp Val
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 Leu Asn Lys Ile Tyr Lys Arg Thr Pro Phe Lys Phe Gly Phe Val Asp
 1985 1990 1995 2000
 Lys Ser Ala Asp Tyr Ile Ile Lys Gln Gly Lys Leu Gln Lys Ala Met
 2005 2010 2015
 Glu Leu Glu Ile Lys Thr Arg Lys Val Lys Gly Ile Asn His Leu Phe
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 2065 2070 2075 2080
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 2085 2090 2095
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 Asn Val Phe Lys Cys Ser Ser Asn Val Pro Tyr Lys Ser Arg Lys Tyr
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 Lys Lys Tyr Ile Tyr Ile Tyr Ile Tyr Ile Tyr Val
 2195 2200 2205

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<211> 1817

<212> PRT

<213> Plasmodium falciparum

<400> 112

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Asn	Met	Lys 35	Asp	Phe	Cys	Ile	Ile 40	Arg	Met	Ser	Asp	Tyr 45	Met	Tyr	Ser
Arg	Arg 50	Lys	Arg	Lys	Arg	Asn 55	Ile	Leu	Glu	Asp	Asp 60	Ser	Asn	Met	Leu
Ile 65	Leu	Thr	Gly	Asn	Leu 70	Pro	Leu	Asp	Phe	Cys 75	Leu	Asn	Leu	Val	Glu 80
Lys	Leu	Lys	Cys	Leu 85	Ser	Leu	Cys	Val	Ser 90	Ile	Val	Leu	Arg	Ser 95	Leu
Ile	Lys	Lys 100	Lys	Asn	Glu	Tyr	Thr	Thr 105	Lys	Ile	Lys	Asn 110	Ile	Lys	Asp
Val	Ser	Ile 115	Ile	Asn	Leu	Tyr	Tyr 120	Asp	Tyr	Thr	Leu 125	Ile	Met	Ile	Asn
Glu 130	Ile	Asn	Glu	Phe	Tyr	Ser 135	Ile	Leu	Asn	Phe	Ile 140	Asn	Phe	Ser	Ile
Glu 145	Tyr	Met	Leu	Ile	Tyr 150	Cys	Ile	Ile	Ile	Cys 155	Asp	Tyr	Tyr	Lys	Asn 160
Lys	Ser	Ile	Ile	Lys 165	Lys	Lys	Asn	Ile	Gly 170	Asn	Lys	Lys	Asn	Phe 175	Ile
Tyr	Leu	Ser	Ser 180	Thr	Leu	Phe	Asp	Leu 185	Leu	Ile	Lys	Cys	Asn 190	Phe	Met
Arg	Thr	Tyr 195	Leu	Ser	Ser	Thr	Tyr 200	Arg	Asn	Ile	Leu	Lys 205	Gln	Cys	Leu
Phe	Asn 210	Ile	Ile	Arg	Ser	Gly 215	Lys	Tyr	Ile	Pro	Ile 220	Glu	Phe	Phe	Gln
Gly 225	Tyr	Ile	Ile	His 230	Lys	Asn	Glu	Phe	Leu	Ala 235	Leu	Phe	Leu	Thr	Lys 240
Arg	Ile	Glu	Glu	Glu 245	Val	Phe	Leu	Lys	Lys 250	Lys	Met	Lys	Val	Lys 255	Glu
Tyr	Tyr	Asp	Tyr 260	Asn	Asn	Asn	Lys	Ser 265	Lys	Thr	Asp	Asn 270	Asn	Leu	Leu
Thr	His	His 275	His	Lys	Tyr	Gly	Asp 280	Phe	Met	Ala	Ser	Ser 285	Glu	Lys	Arg
Ala	Glu 290	His	Phe	Ile	Asn 295	Glu	Asn	Leu	Lys	Asn 300	Ala	Met	Ile	Ser	Ile
Asn 305	Ile	Tyr	Lys	Leu	Ile 310	Ile	Leu	Leu	Tyr	Lys 315	Ala	Asp	Tyr	Tyr	Arg 320
Cys	Thr	Ser	Thr 325	Leu	Ile	Cys	Leu	Phe	Ile 330	Asp	Ser	Phe	Tyr	Lys 335	Thr
Leu	Gly	Gly	Asp 340	Lys	His	Lys	Asn	Leu	Ile 345	Leu	Lys	Asp	Glu	Val 350	Ile
Thr	Asp 355	Thr	Lys	Gln	Gly	Lys	His 360	Asp	Met	Asn	Asp	Tyr 365	Asn	Met	Asn
Lys	Lys	Asn	Asn	Met	Asp	Ile	Asn	Ile	Thr	Ile	Asn	Asn	Asn	Asn	Asn

370					380					380					
Asn	Asn	Asn	Asn	Lys	Ile	Tyr	Asn	Asp	Asn	Thr	Leu	Asn	Val	Tyr	Asn
385					390					395					400
Asn	Ser	Tyr	Asn	Ile	His	Ser	Asn	His	Leu	Met	Asn	Asp	Lys	Arg	Lys
				405					410					415	
Asn	Ala	Gln	Val	Leu	Glu	Lys	His	Leu	Lys	Met	Leu	Cys	Asp	Asn	Phe
			420					425					430		
Phe	Asn	Leu	Glu	Glu	Phe	Tyr	Ser	Ser	Asn	Ile	Ile	Ile	Asn	Asn	Met
		435					440					445			
Asp	Ile	Glu	Tyr	Thr	Tyr	Asp	Tyr	Phe	Ile	Leu	Tyr	Glu	Lys	Cys	Phe
	450					455					460				
Leu	Pro	Ile	Glu	Arg	Ile	Val	His	Val	Asn	Tyr	Met	Lys	Tyr	Leu	Tyr
465					470				475					480	
Lys	Asn	Asn	Glu	Arg	Lys	Lys	Asn	Lys	Ile	Arg	Lys	Phe	Leu	Ile	Thr
				485					490					495	
Leu	Leu	Glu	Tyr	Ser	Arg	Asp	Ile	Asn	Phe	His	Phe	Phe	Ile	Phe	Asn
			500					505					510		
Leu	Ile	Leu	Tyr	Lys	Cys	Lys	Asn	Glu	Phe	Pro	Cys	Ser	Ile	Phe	Glu
		515					520					525			
Leu	His	Ile	Ser	Gln	Tyr	Leu	Tyr	Phe	Phe	Val	Lys	Leu	Asn	Glu	Leu
	530				535						540				
Asn	Ile	Lys	Asp	Ala	Tyr	Ile	Tyr	Tyr	Phe	Asn	Asn	Phe	Lys	Tyr	Gln
545					550					555					560
Asp	Met	Ile	Ile	Tyr	Phe	Ser	Arg	Lys	Ala	Phe	Tyr	Pro	Trp	Glu	Thr
				565					570					575	
Asn	Val	Glu	Gln	Gln	Lys	Lys	Gln	Thr	Leu	Ser	Tyr	Ile	Tyr	Asn	Asp
			580					585					590		
Lys	Ile	Lys	Lys	Asn	Lys	Lys	Asn	Asn	Ser	Tyr	Tyr	Glu	Met	Asn	Asn
		595					600					605			
Asn	Thr	Tyr	Met	Asn	Glu	His	Gly	Tyr	Thr	Asp	Ile	Glu	Asn	Glu	Arg
	610					615					620				
Leu	Asn	Lys	Lys	Asn	Lys	Arg	Leu	Asn	Val	Arg	Gly	Arg	Thr	Asn	Thr
625					630					635				640	
Leu	Asp	Asp	Ile	Ile	Val	Ser	Asp	His	Gly	Asn	Ser	Tyr	Asp	Lys	Tyr
				645					650				655		
Asn	Thr	Ser	Lys	His	Asn	Arg	Arg	Lys	Asn	His	Ile	Asn	Glu	Met	Lys
			660				665					670			
Lys	Lys	Gln	Asn	Asn	Lys	Lys	Lys	Asn	Thr	Leu	Phe	Val	Asp	Gly	Lys
			675				680					685			
Asp	Met	Glu	Gly	Ile	Gly	Lys	Glu	Lys	Glu	Lys	Glu	Asn	Lys	Asn	Met
	690					695				700					
Asn	Asn	Asn	Ile	Phe	Tyr	Asn	Asn	Ser	Tyr	Ser	Asn	Ile	Asn	Asn	Ser
705					710					715				720	
Ser	Tyr	Ser	Asn	Ile	Asn	Asn	Asp	Ile	Tyr	Ser	Val	Asp	Asn	Met	Thr
				725				730					735		
Ser	Val	Asn	Asn	Thr	Lys	Tyr	Val	Ser	Gly	Val	Pro	Ser	Tyr	Ala	His
			740				745					750			

Val Leu Ile Asn Lys Gln Val Asn Glu Tyr Tyr Gln Gly Leu Pro Asn
 755 760 765
 Tyr Asn Asn Met Met Ile Lys Gly Ser His Ile Ile Asn Glu Leu Pro
 770 775 780
 Lys Asn Asn Tyr Ile Tyr Glu Asn Asn Tyr Ile Gly Gln Asn Tyr Leu
 785 790 795 800
 Met Thr Asn Pro Leu Tyr Asn Lys Glu Thr Lys Asp Ile Phe Tyr Thr
 805 810 815
 Ile Tyr Lys Tyr Leu Phe Lys Ile Ile Ser Tyr Pro Ser Leu Lys Lys
 820 825 830
 Arg Met Glu Phe Ile Asp Asn Cys Met Lys Thr Lys Ile Phe Val Ile
 835 840 845
 Arg Lys Val Cys Asn Phe Lys Asn Arg Pro Phe Ser Ser Asn Lys Lys
 850 855 860
 Asn Asn Lys Met Asn Arg Asp Ser Ser Tyr Val Asp Asn Ile Ser Ser
 865 870 875 880
 Tyr Tyr Asp Asp Asp Asn Asn Asn Asn Asn Asn Asn Ile Asn Ile Leu
 885 890 895
 Lys Lys Lys Lys Lys Lys Arg Glu Val Gly Leu Gly Gly Ile Arg Leu
 900 905 910
 Arg Asn Gly Val Asp Asn Lys Arg Thr His Asp Asp Thr Ile Asp Glu
 915 920 925
 Lys Tyr Lys Asn Asn Arg Asn Tyr Leu Phe Met Asn Gly Val Asp Val
 930 935 940
 Leu Tyr Asn Lys Asp Gln Leu Gly Tyr Tyr Lys Asn Ser Leu Asp Asp
 945 950 955 960
 Asn Asn Asn Asn Asn Asn Asn Tyr Asn Asn Asp Asn Ile Arg Arg Ser
 965 970 975
 His Val Ser Ser Cys Ser Tyr Arg Arg Ala His Asn Asn Ile Lys Tyr
 980 985 990
 Asp Ile Lys Glu Gly Gly Ser Asp Asn Ile Tyr Thr Ser Asn Ile Lys
 995 1000 1005
 Arg Asn Lys Lys Lys Ile Lys Asn Ile Glu Glu Ile Phe Asn Ile Asn
 1010 1015 1020
 Ser Met Leu Asn Lys Glu Ala Leu Lys Asn Tyr Tyr Thr Val Asp Lys
 1025 1030 1035 1040
 Thr Ile Leu Tyr Asp Glu Ser Phe Ser Lys Leu Leu Lys Gly Ile Phe
 1045 1050 1055
 Glu Lys Asn Lys Cys Leu Phe Lys Leu Lys Glu Asn Tyr Trp Ser Lys
 1060 1065 1070
 Gln Asn Ser Tyr Tyr Leu His Leu Lys Asp Ile Lys Lys Cys Arg Thr
 1075 1080 1085
 Cys Leu Asn Tyr Gln Arg Leu Leu Phe His Glu Val Ile Asn Leu Phe
 1090 1095 1100
 Val Phe Tyr Val Tyr Lys Phe Cys Asn Trp Asp Val Leu Lys Asn Tyr
 1105 1110 1115 1120

Phe Asp Ile Leu Ile Asn Gly Ser Glu Glu Ala Ile Ile Lys Val Leu
 1125 1130 1135
 Glu His Phe Arg Asn Ile Asn Lys Glu Gln Ile Asp Val Ile Arg Lys
 1140 1145 1150
 Ser Tyr Asn Asn Met Tyr Glu Tyr Leu Ser Lys Ser Lys Tyr Glu His
 1155 1160 1165
 Ile Asp Asp Ile Ile Asn Asp Tyr Asn Asn Lys Ile Asn Asn Met Glu
 1170 1175 1180
 Arg Lys Ile Asn Ile Asn Arg Ile Ile Asp Ile Ile Asp Ile Phe Lys
 1185 1190 1195 1200
 Glu Tyr Leu Leu Leu Ile Gln Gln Glu Ile His Thr Lys Glu Gly Leu
 1205 1210 1215
 Lys Asn His Ile Tyr Gly Lys Ser Lys Ile Leu Phe Lys Asn Phe Leu
 1220 1225 1230
 Pro Ser Phe Asn Leu Leu Lys Leu Ile Ile Leu Cys Asp Lys Lys Lys
 1235 1240 1245
 Glu Lys Ile Glu Asn Leu Asn Thr Asn Cys Phe Ser Thr Val Asn Asn
 1250 1255 1260
 Met Leu Arg Asn Asp Met Ile Lys Gly Ser Thr Phe Tyr Phe Ser Lys
 1265 1270 1275 1280
 Tyr Ser Tyr Cys Phe Glu Arg Leu Leu Asp Tyr Ala Phe Ser Leu Thr
 1285 1290 1295
 Ile Thr Phe Glu Asn Ile Asn Phe Ile Ile Asn Tyr Ile Gly Asp Val
 1300 1305 1310
 Leu Lys Leu Tyr Glu Val Asp Phe Lys Asn Ser Leu Tyr Leu Leu Val
 1315 1320 1325
 Ile Ile Lys Leu His Lys Phe Ile Asn Asn Leu Phe Glu Ile Thr Lys
 1330 1335 1340
 Val Arg Glu Ile Leu Lys Thr Lys Val Ser Ile Leu Lys Asn Asn Lys
 1345 1350 1355 1360
 Tyr Tyr Glu Arg Ile Lys Leu Leu Tyr Leu Leu Asn Cys Ile Pro Leu
 1365 1370 1375
 Ile Tyr Leu Asp Pro His Met Asn Val Ile Leu Ile Asn Glu Ser Tyr
 1380 1385 1390
 Glu Tyr Lys Met Asn Asp Asp Asp Lys Ile Ile Phe Ser Lys Leu Ser
 1395 1400 1405
 Pro Phe Ser Leu Val Ser Lys Val Val Asn His Lys Leu Arg Ser Val
 1410 1415 1420
 Tyr Thr Tyr His Asp Tyr Thr Asp Asn Leu Glu Asn Glu Glu Pro Ile
 1425 1430 1435 1440
 His Lys Asn Lys Thr Ser Lys Ser Met Asn Asp Asp Thr Lys Ser Val
 1445 1450 1455
 Ser His Tyr Glu Glu Thr Lys Lys Lys Asn Asp Asp Asp Asp Met Ser
 1460 1465 1470
 Tyr Asp Ser Ser Ser Asp Tyr Pro Lys Asp Ile Ser Tyr Asp Thr Ser
 1475 1480 1485
 Asp Gly Ser Tyr Arg Asp Asn Asn Asn Asn Gly Ser Gly Pro Asn Asp

1490	1495	1500
Val Lys Gln Met Lys Glu Lys Gly Ile Pro Lys Val Ser Lys Glu Asn 1505 1510 1515 1520		
Ala Lys Asn Lys Lys Lys Asn Val Asn Val Asn Ile Asn Ile Asn Asn 1525 1530 1535		
Lys Asn Asp Glu Ser Tyr Asn Ile His Asn Lys Ile Lys Lys Asp Asn 1540 1545 1550		
Ile Ile Ala Ile Asp Lys Asp Asp Arg Lys Thr Leu Tyr Tyr Leu Tyr 1555 1560 1565		
Asn Val Asn Tyr Cys Phe Asn Asp Gln Asn Asn Asn Asn Asn Asn Asn 1570 1575 1580		
Asn Asn Asn Met Asn Asn Ser Asn Ile Phe Gly Asn Pro His Asn Pro 1585 1590 1595 1600		
Glu Leu Val Val Leu Ser Tyr Lys Asn Tyr Cys Phe Tyr Ile Val Trp 1605 1610 1615		
Ile Ser Asn Leu Leu Leu Asn His Lys Ile Glu Tyr Glu Ser Leu Ile 1620 1625 1630		
Tyr Val Tyr Leu Lys Ile Tyr Asn Asn Thr Lys His Gln Lys Ala Ser 1635 1640 1645		
Leu Leu Glu Glu His Glu Ile Thr Ile Ile Leu Tyr Tyr Leu Phe Thr 1650 1655 1660		
Met Trp Ile Asn Gly Asp Lys Asn Asn Ser Ser Phe Phe Phe Tyr Asn 1665 1670 1675 1680		
Glu Glu Lys Ser Tyr His Glu Lys Asn Asn Leu Gly Tyr Phe Leu Lys 1685 1690 1695		
Asp Thr Tyr Gly Asn Leu Gln Tyr Ile Asn Asn Tyr Ser Leu Ile Thr 1700 1705 1710		
Leu Leu Lys Glu Leu Leu Ser Arg Ala Glu Phe Tyr Phe Glu Tyr Thr 1715 1720 1725		
Ser Asp Ala Ala Ser Arg Asn Tyr Asp Ile Ser Cys Ile Ile Leu Asp 1730 1735 1740		
Ser Ser Ile Tyr Asp Asn Glu Lys Val Lys Lys Ser Ser Val Asp Ile 1745 1750 1755 1760		
Leu Lys Lys Phe Phe Asp Asn Ile Tyr Ile Thr Phe Asn Asp Val Leu 1765 1770 1775		
Ile Lys Ile Pro Phe Leu Asn Gln Ile Leu Glu Phe Gln Lys Ile His 1780 1785 1790		
Glu Phe Leu Lys Arg Phe Lys Ile Tyr Leu Asp Glu Ile Ile Cys Arg 1795 1800 1805		
Ile Thr Leu Thr Glu Gly Asn Tyr Ile 1810 1815		

<210> 113

<211> 250

<212> PRT

<213> Plasmodium falciparum

<400> 113

Met Lys Lys Ser Arg Phe Leu Leu Leu Ser Ile Phe Phe Cys Phe Val

246

1 5 10 15
 Thr Asn Ile Ser Leu Glu Phe Lys Arg Lys Gln Lys Val Glu Ile Asn
 20 25 30
 Ser Leu Gln Thr Asn Lys Asn Asn Asp Asn Ile Arg Glu Glu Lys Ile
 35 40 45
 Lys Gly Asp Val Glu Ser Gln Pro Asp Val Asp Gly Asp Thr Cys Val
 50 55 60
 Ile Phe Ser Ser Ser Glu Gly Asn Ser Arg Asn Cys Trp Cys Pro Arg
 65 70 75 80
 Gly Tyr Ile Leu Cys Ser Glu Glu Asp Val Leu Asp Val Gln Gly Lys
 85 90 95
 Leu Asn Glu Ile Lys Asn Lys His Glu Arg Ser Leu Val Thr Pro Leu
 100 105 110
 Trp Met Lys Arg Leu Cys Asp Asn Ser Asn Asp Val Gly Phe Lys Ser
 115 120 125
 Met Ser Val Val Ile Asp Tyr Glu Leu Ala Val Leu Cys Lys Asp Gly
 130 135 140
 Ser Asn Lys Asp Tyr Ala Asp Phe Glu Ile Ile Gly Ala Ser Gly Tyr
 145 150 155 160
 Ile Thr Gly Glu Glu Met Ile Glu Glu Gln Lys Arg Asn Pro Trp Tyr
 165 170 175
 Val Pro Arg Lys Cys Thr Val Asn Asn Phe Tyr Leu Cys Arg Lys Val
 180 185 190
 Glu Asn Asp Asn Val Asn Cys Ser Tyr Thr Pro Trp Ser Asp Trp Ser
 195 200 205
 Ala Cys Lys Asn Asn Thr Gln Lys Arg Tyr Arg Lys Val Arg Arg Ser
 210 215 220
 Asn Gln Asn Asn Glu Asn Phe Cys Leu Trp Asn Asp Lys Ile Val Pro
 225 230 235 240
 Arg Asn Ile Met Glu Gln Thr Arg Ser Cys
 245 250

<210> 114

<211> 447

<212> PRT

<213> Plasmodium falciparum

<400> 114

Met Asp Glu Trp Ile Val Val Gln Lys Lys Lys Ser Asp Leu His Lys
 1 5 10 15
 Lys Gln Val Ile Asp Lys Leu Thr Val Glu Asn Glu Lys Lys Gln Arg
 20 25 30
 Glu Lys Lys Asn Glu Asn Ala Glu Asn Asn Ile Tyr Glu Glu Lys Glu
 35 40 45
 Asn Asn Lys Ile Gln Ser Ile Tyr Asn Lys Lys Lys Lys Met Asn Val
 50 55 60
 Lys Asn Ile Cys Lys Asn Ile Glu Asn Val Thr Cys His Leu Glu Lys
 65 70 75 80
 Asn Glu Phe Phe Lys Asn Phe Thr Asn Lys Phe Asn Thr Ile Asn Lys

85								90				95			
Glu	Asn	Leu	Asn	Lys	Ala	Ile	Ile	Ser	Leu	Gly	Leu	Gly	Ser	Leu	Ile
			100					105					110		
Asp	Met	Asn	Leu	Asn	Asn	Lys	Lys	Ala	Cys	Ile	Tyr	Gln	Phe	Ser	Phe
		115					120					125			
Leu	Leu	Leu	Leu	Lys	Lys	Val	Tyr	Asp	Ile	Lys	Gln	Val	Tyr	Ile	Tyr
	130					135					140				
Asp	Pro	Lys	Ile	Ser	Glu	Val	Asp	Arg	Asn	Val	Cys	Glu	Tyr	Phe	Asn
145					150					155					160
Ile	Lys	Ile	Leu	Ile	Cys	Ser	Asn	Glu	Glu	Glu	Asn	Lys	Lys	Asp	Asp
				165					170					175	
Glu	Asp	Asn	Lys	Asn	Gly	Asp	Asn	Lys	Gly	Asp	Asn	Tyr	Asn	Lys	Gly
			180					185					190		
Asp	Asn	Tyr	Asn	Lys	Glu	Asp	Asn	Tyr	Asn	Lys	Val	Asp	Asn	Tyr	Asn
		195					200					205			
Lys	Gly	Asp	Asn	Tyr	Asn	Ile	Glu	Asp	Asn	Tyr	Tyr	Lys	Glu	Asp	Asn
	210					215					220				
Tyr	Asn	Lys	Asp	Asp	Asn	Tyr	Tyr	Lys	Glu	Asp	Asn	Phe	Asn	Lys	Asp
225					230					235					240
Asp	Asn	Phe	Asn	Lys	Asp	Asp	Asn	Tyr	Asn	Lys	Glu	Asp	Asn	Tyr	Asn
				245					250					255	
Tyr	His	Asn	Phe	Met	His	Thr	Leu	Lys	His	Lys	Glu	His	Asn	Lys	Cys
			260					265					270		
Thr	His	Asn	Pro	Asn	Asp	Val	Pro	Leu	Pro	Cys	Thr	Glu	Lys	Met	Asn
		275					280					285			
Ile	Ile	Lys	Phe	Ser	Ser	Val	Met	Glu	Lys	Val	Ile	Leu	Phe	Met	Pro
	290					295					300				
His	Cys	Asp	Ile	His	Leu	Tyr	Gly	Asp	Ile	Leu	Tyr	Ser	Ile	Phe	Val
305					310					315					320
His	Glu	Lys	Leu	Phe	Tyr	Lys	Asn	Val	Gln	Phe	Tyr	Phe	Asn	Leu	Glu
				325					330					335	
Asn	Thr	Ile	Phe	Leu	Gly	Asn	Cys	Phe	Asp	Tyr	Tyr	Arg	Asp	His	Ser
			340					345					350		
Tyr	Leu	Tyr	Lys	Pro	Phe	Gly	Leu	Pro	Ser	Tyr	Val	Ile	Lys	Met	Leu
		355					360					365			
Asn	Ala	Asn	Arg	Gln	Lys	Leu	Asn	Ile	Ser	Ile	Gln	Glu	Asn	His	Met
	370					375					380				
Asn	Lys	Leu	Leu	Ala	His	Phe	Lys	Thr	Tyr	His	Phe	Ile	Phe	Tyr	Ile
385					390					395					400
Leu	Asn	Phe	Val	His	Glu	Thr	Lys	Phe	Pro	Ile	Phe	Ser	Asp	His	Ala
				405					410					415	
Gly	Ser	Phe	Asn	Asp	Leu	Ser	Ile	Thr	Ile	Phe	His	Lys	Ile	Glu	Asp
			420					425					430		
Lys	Phe	Lys	Phe	Trp	Ser	His	Val	Tyr	Glu	Ser	Leu	Asn	Asn	Met	
		435					440					445			

<211> 1224

<212> PRT

<213> Plasmodium falciparum

<400> 115

Met Lys Pro Val His Phe Asn Asn Ser Ile Ile Asn Glu Asp Asn Leu
 1 5 10 15

Asp Leu Leu Gln Cys Asp Asp Lys Lys Lys Glu Gly Ser Phe Asn Ile
 20 25 30

Phe Asn Asn Asn Asn Asn Gln Ile Asn Asn Val Ile Tyr Asp Lys Asn
 35 40 45

Val Phe Pro Asn Asn Tyr Val Gln Asn Lys Ser His Ile Asn Ser Glu
 50 55 60

Tyr Val Asn Asn Met Asp Tyr Leu Ser Leu His Thr Gly Ile Glu Lys
 65 70 75 80

Tyr Lys Tyr Arg Lys Asn Asn Asn Asn Val Lys Asn Met Ile Leu Lys
 85 90 95

Asp Glu Asp Ile Leu Tyr Asp Tyr Asn Ile His Leu Ser Asn His Leu
 100 105 110

Ile Asn His Asp Ile Asn Phe Ile Tyr Ser Ser Asn Asn Ile Phe Asn
 115 120 125

Leu Cys Asn Asn Lys Asn Pro Lys Tyr Phe Pro Asn Ser Lys Asn Ser
 130 135 140

Asn Glu Ile Lys Lys Asp His Lys Asn Lys Val Asn Val Tyr Thr Asn
 145 150 155 160

Asn Ile His Tyr His Thr Lys Lys Asn Lys Asn Phe Tyr Ser Asn Pro
 165 170 175

Thr Glu Val Asn Tyr Asn Ser Leu Leu Ser Asn Asn Leu Lys His Asn
 180 185 190

Ser Leu Tyr Tyr Ser Phe Arg Lys Asp Thr Ser Asn Phe Asn Phe Ser
 195 200 205

Cys Asp Lys Asn Asn Thr Thr Phe Ser Lys Pro Asn Cys Leu His Glu
 210 215 220

Ser Asn Pro Ser Ser Thr Ser Thr Cys Tyr Pro Asn Val Asn Thr Ile
 225 230 235 240

Pro Leu Ala Ile Asn Leu Leu Asn Asn Val Asn Asp Asp Ile Ser Pro
 245 250 255

Ile His Pro Leu Pro Leu Ser Glu Ser Ser Ser Thr Ser Ala Ser Thr
 260 265 270

Ser Ala Ser Ala Ser Thr Ser Ala Ser Thr Ser Ala Ser Thr Ser Val
 275 280 285

Ser Thr Ser Val Ser Thr Ser Val Ser Thr Ser Ala Ser Thr Thr Met
 290 295 300

Asn Ser Pro Arg Pro Ser Asp Asn His Ile Ser Asn Ser Phe Pro Leu
 305 310 315 320

Ser Arg Glu Ser Arg Ala Thr Glu Gln Val Asn Arg Leu Tyr Phe Pro
 325 330 335

Val Asn Asp Val Thr Ser Lys Ser Asp Pro Asn Pro Asn Asn Glu Leu
 340 345 350

250

His Leu Thr Gly Asn Asn Leu Tyr Lys Asn Ile Asn Asn Gly Asp Arg
 725 730 735
 Asn Asp Gly Val His Gly His Val Cys Ala Glu Glu Ser Cys Val Tyr
 740 745 750
 Glu Asp Phe Ser Ser Pro Asn Glu Asp Asn Leu Glu Arg Glu Gln Asn
 755 760 765
 Lys Ile Asn Asp Asn Asn Cys Asp Glu Lys Asn Asn Asn Cys Asp Glu
 770 775 780
 Lys Asn Asn Ser Cys Asp Glu Lys Asn Asn Ser Cys Asp Glu Lys Asn
 785 790 795 800
 Asn Ser Cys Asp Glu Lys Asn Asn Asn Cys Asp Lys Thr Lys Trp Thr
 805 810 815
 Cys His Lys Leu Leu Glu Asp Asn Tyr Tyr Lys Lys Tyr Asn Val Ser
 820 825 830
 Ile Pro His Arg Tyr Asn Ser Met Asp Ser Val Leu Asp Phe Tyr Asp
 835 840 845
 Asp Tyr Asp Tyr Tyr His Asn Met Asp Thr Tyr Asn Tyr Phe Asn Asp
 850 855 860
 Lys Cys Lys Asn Asn Cys Lys Lys Cys Cys Lys Lys Val Lys Val Arg
 865 870 875 880
 Lys Ser Gln Arg Glu Asn Lys Lys Asn Ile Thr Lys Tyr Ile Asn Asn
 885 890 895
 Asn Lys Asn Phe Gly Lys Asn Lys Asn Tyr Gly Lys Asn Lys Asn Tyr
 900 905 910
 Gly Lys Asn Lys Asn Tyr Gly Lys Asn Lys Asn Tyr Gly Lys Asn Lys
 915 920 925
 Asn Tyr Gly Asn Asn Lys Asn Tyr Gly Asn Asn Asn Ser His Val Phe
 930 935 940
 Ile Lys Asn Lys Glu Met Tyr Asn Phe Leu Phe Leu Phe Phe Asn Ile
 945 950 955 960
 Pro Ser Val Glu Thr Arg Asn Lys Phe Phe Cys Ile Thr Lys Thr Asn
 965 970 975
 Ile Lys Asn Ile Phe Phe Glu Ile Leu Ser Phe Glu Leu Gln Leu Phe
 980 985 990
 Glu Ser Thr Tyr Leu Cys Leu Thr Ser Val Ala Ala Tyr Val Gln Ile
 995 1000 1005
 Asn Asn Phe Leu Asn Leu Val Tyr Tyr Leu Ser Asn Ser Tyr Gly Ile
 1010 1015 1020
 Ile Leu Ala Lys Leu Ile Gly Val Tyr Ile Ser Ser Gln Arg Lys Arg
 1025 1030 1035 1040
 Glu Lys Asp Asn Gln Asn Lys Lys Tyr Asn Glu Tyr Asn Leu Lys Glu
 1045 1050 1055
 Pro Met Lys Glu Tyr Thr Lys Leu Phe Val Glu Lys Asn Glu Glu Val
 1060 1065 1070
 Asn Asp Ile Lys Asn Lys Lys Asn Phe Ser Leu Thr Glu Ile Cys Leu
 1075 1080 1085
 Ala Phe Phe Leu Leu Leu Ser Phe Leu Tyr Thr Cys Leu Thr Val Leu

1090 1095 1100

Tyr Val Tyr His Lys Asn Ile Ile Ile Phe Phe Tyr Thr Asp Met Lys
 1105 1110 1115 1120

Leu Gln Asn Gln Leu Ile Asn Ile Phe Asn Ile Leu Asn Leu Glu Leu
 1125 1130 1135

Tyr Phe Glu Ala Leu Ala Ser Leu Leu Asn Ser Val Ile Lys Gly Leu
 1140 1145 1150

Ser Leu Gln Asn Glu Ile Thr Ser Phe Thr Phe Phe Asn Phe Met Phe
 1155 1160 1165

Leu Met Asn Ile Leu Gly Leu Phe Leu Ser Phe Phe Leu Lys Trp Glu
 1170 1175 1180

Leu Tyr Gly Phe Ile Tyr Ser Asn Leu Ile Cys Met Ile Leu Gln Val
 1185 1190 1195 1200

Leu Tyr Leu Ile Ile Phe Leu Thr Asn Lys Phe Tyr Ile Lys Asn Thr
 1205 1210 1215

His Lys Glu Gln Ile Phe Ser Tyr
 1220

<210> 116

<211> 365

<212> PRT

<213> Plasmodium falciparum

<400> 116

Met Ser Glu Gln Gly Asn Leu Ser Ser His Asn Met Lys Ser Lys Met
 1 5 10 15

Asp Arg Asn Asp Ser Asp Lys Val Lys Cys Lys Asn Gln Glu Gly Ile
 20 25 30

Asn Glu Cys Val Asn Lys Glu Asn Thr Gln Glu Glu Asn Gln Asn Ile
 35 40 45

His Asp Glu Lys Lys Lys Ser Cys Glu Gln Asn Arg Asn Asn Ile Thr
 50 55 60

Leu Asp Asp Asp Val Asn Ile Asn Lys Ile Val Glu Arg Met Ser Val
 65 70 75 80

Glu Glu Pro Glu Val Leu Thr Lys Ile Phe Asn Leu Met Lys Asn Asn
 85 90 95

Asn Cys Leu Asn Phe Tyr Pro Leu Leu Thr Pro Tyr His Asn Ile Glu
 100 105 110

Lys Ile Val Asp Ile Leu Met Gln Glu Asn Tyr Glu Tyr Glu Asn Thr
 115 120 125

Trp Thr Val His Cys Asp Ala Ser Phe Ile Cys Arg Leu Leu Tyr Glu
 130 135 140

Gly Phe Ile Pro Val Ala Ser Lys Gln Lys Leu Tyr Lys Ile Glu Asn
 145 150 155 160

Tyr Glu Thr Val Met Tyr Lys Glu Cys Leu Leu Ile Pro Lys Ile His
 165 170 175

Phe Ile Arg Ser Cys Met His Pro Ser Glu Ile His Ile Ser Lys Lys
 180 185 190

Val Lys Lys Lys Cys Lys His Phe Tyr Ile Thr Ile Asp Lys Asn Phe

195 200 205
 Glu Gly Val Met Glu Gly Ile Val Glu Lys His Gly Gln Asn Trp Leu
 210 215 220
 Tyr Pro Phe Val Gln Glu Phe Lys Lys Ile Phe Tyr Lys His Val
 225 230 235 240
 Thr Tyr Lys Asn Val Glu Leu His Ser Val Glu Leu Trp Phe Gly Lys
 245 250 255
 Glu Leu Val Ala Gly Glu Ile Gly Asn Thr Val Gly Ser Ile Tyr Thr
 260 265 270
 Ser Leu Thr Gly Phe Gln Arg Lys Ser Cys Ala Gly Thr Ile Gln Leu
 275 280 285
 Cys Ala Leu Ala Lys Leu Leu Glu Ile Gln Lys Phe Glu Leu Trp Asp
 290 295 300
 Leu Gly Met Leu Leu Pro Tyr Lys Lys Asp Ile Gly Ser Lys Glu Ile
 305 310 315 320
 Thr Met Lys Glu Phe Phe Arg Lys His Arg Leu Phe Lys His Gln Pro
 325 330 335
 Ala Glu Phe Lys Thr Pro Phe Met Asp Lys Leu Asn Cys Ser Val Leu
 340 345 350
 Ile Lys Gly Thr Asp Pro Gln Thr Leu Lys Glu Gln Glu
 355 360 365

<210> 117

<211> 166

<212> PRT

<213> Plasmodium falciparum

<400> 117

Met Lys Gly Ser Asp Tyr Leu Ile Leu Leu Lys Gln Lys Val Val Asn
 1 5 10 15
 Phe Ile Tyr Trp Tyr Asn Ser Ser Ser Ile Gly His Arg Asn Phe Val
 20 25 30
 Trp Val Phe Ile Gly Ile Gly Cys Gly Tyr Ile Tyr Gly Thr Leu Glu
 35 40 45
 Tyr Lys Lys Lys Ile Arg Asp Lys Gly Ile Tyr Gly Asp Phe Ile Tyr
 50 55 60
 Val Asp Glu Tyr Ile Val Asp Asp Gln Asn Lys Lys Gln Phe Glu Lys
 65 70 75 80
 Asn Tyr Asn Lys Leu Asn Ile His Ser Phe Lys Asn Lys Gly Tyr Glu
 85 90 95
 Tyr Thr Lys Met Phe Lys Ala Ile Lys Asn Glu Asn Cys Pro Leu Ser
 100 105 110
 Tyr Leu Gln Leu Arg Leu Trp Arg Asn Lys Asn Cys Tyr Glu Gln Tyr
 115 120 125
 Val Asn Asn Lys Asn Ile Gln Thr Leu Leu Thr Asn Leu Lys Asp Thr
 130 135 140
 Cys Ile Phe Tyr Ser Thr Gln Lys Tyr Lys Thr Ile Val Asp Asp Ser
 145 150 155 160
 Ile Val Arg Leu Ile Pro

165

<210> 118
 <211> 328
 <212> PRT
 <213> Plasmodium falciparum

<400> 118

Met	Gly	Lys	Asp	Tyr	Tyr	Ser	Ile	Leu	Gly	Val	Ser	Arg	Asp	Cys	Thr
1				5					10					15	
Thr	Asn	Asp	Leu	Lys	Lys	Ala	Tyr	Arg	Lys	Leu	Ala	Met	Met	Trp	His
			20					25					30		
Pro	Asp	Lys	His	Asn	Asp	Glu	Lys	Ser	Lys	Lys	Glu	Ala	Glu	Glu	Lys
		35					40					45			
Phe	Lys	Asn	Ile	Ala	Glu	Ala	Tyr	Asp	Val	Leu	Ala	Asp	Glu	Glu	Lys
	50					55					60				
Arg	Lys	Ile	Tyr	Asp	Thr	Tyr	Gly	Glu	Glu	Gly	Leu	Lys	Gly	Ser	Ile
65					70					75					80
Pro	Thr	Gly	Gly	Asn	Thr	Tyr	Val	Tyr	Ser	Gly	Val	Asp	Pro	Ser	Glu
				85					90					95	
Leu	Phe	Ser	Arg	Ile	Phe	Gly	Ser	Asp	Gly	Gln	Phe	Ser	Phe	Thr	Ser
			100					105					110		
Thr	Phe	Asp	Glu	Asp	Phe	Ser	Pro	Phe	Ser	Thr	Phe	Val	Asn	Met	Thr
		115					120					125			
Ser	Arg	Lys	Ser	Arg	Pro	Ser	Thr	Thr	Thr	Asn	Ile	Asn	Thr	Asn	Asn
	130					135					140				
Tyr	Asn	Lys	Pro	Ala	Thr	Tyr	Glu	Val	Pro	Leu	Ser	Leu	Ser	Leu	Glu
145					150					155					160
Glu	Leu	Tyr	Ser	Gly	Cys	Lys	Lys	Lys	Leu	Lys	Ile	Thr	Arg	Lys	Arg
				165					170					175	
Phe	Met	Gly	Thr	Lys	Ser	Tyr	Glu	Asp	Asp	Asn	Tyr	Val	Thr	Ile	Asp
			180					185					190		
Val	Lys	Ala	Gly	Trp	Lys	Asp	Gly	Thr	Lys	Ile	Thr	Phe	Tyr	Gly	Glu
		195					200					205			
Gly	Asp	Gln	Leu	Ser	Pro	Met	Ala	Gln	Pro	Gly	Asp	Leu	Val	Phe	Lys
	210					215					220				
Val	Lys	Thr	Lys	Thr	His	Asp	Arg	Phe	Leu	Arg	Asp	Ala	Asn	His	Leu
225					230					235					240
Ile	Tyr	Lys	Cys	Pro	Val	Pro	Leu	Asp	Lys	Ala	Leu	Thr	Gly	Phe	Gln
				245					250					255	
Phe	Ile	Val	Lys	Ser	Leu	Asp	Asn	Arg	Asp	Ile	Asn	Val	Arg	Val	Asp
			260				265						270		
Asp	Ile	Val	Thr	Pro	Lys	Ser	Arg	Lys	Ile	Val	Ala	Lys	Glu	Gly	Met
		275					280					285			
Pro	Ser	Ser	Lys	Tyr	Pro	Ser	Met	Lys	Gly	Asp	Leu	Ile	Val	Glu	Phe
		290				295					300				
Asp	Ile	Val	Phe	Pro	Lys	Ser	Leu	Thr	Ser	Glu	Lys	Lys	Lys	Ile	Ile
305					310					315					320
Arg	Glu	Thr	Leu	Ala	Asn	Thr	Phe								

254

325

<210> 119
 <211> 119
 <212> PRT
 <213> Plasmodium falciparum

<400> 119
 Met Tyr Thr His Leu Ile Phe Ser Val Phe Pro Arg Phe Val His Gln
 1 5 10 15
 Ile Ser Ser Gln Ile Lys Lys Ile Ile Lys Lys Asn Phe Glu Tyr Ala
 20 25 30
 Lys Asp Phe Phe Cys Lys Arg Ser Tyr Thr Tyr Gln Asp Phe Lys Gln
 35 40 45
 Arg Cys Glu Ser Leu Arg Leu Phe Leu Tyr Phe Gly Ile Val Thr Phe
 50 55 60
 Leu Ser Leu Asp Leu Leu Ile Asn Pro Leu Gln Ser Ser Tyr Trp Asp
 65 70 75 80
 Lys Tyr Ser Pro Ser His Leu Ser Arg Lys Cys Val Val Phe Phe Ser
 85 90 95
 Asn Lys Gln Asn Asp Ile Phe Arg His Asp Gly Asn Leu Leu Tyr Glu
 100 105 110
 Lys Tyr Ile Gln Leu Ile Asn
 115

<210> 120
 <211> 320
 <212> PRT
 <213> Plasmodium falciparum

<400> 120
 Met Lys Asp Ile Leu Ser Asn Tyr Ser Asn Leu Ile Tyr Leu Asn Lys
 1 5 10 15
 Tyr Val Lys Glu Lys Asp Lys Tyr Ile Asn Asp Tyr Arg Ile Ile Arg
 20 25 30
 Thr Leu Asn Gln Gly Lys Phe Asn Lys Ile Ile Leu Cys Glu Lys Asp
 35 40 45
 Asn Lys Phe Tyr Ala Leu Lys Lys Tyr Glu Lys Ser Leu Leu Glu Lys
 50 55 60
 Lys Arg Asp Phe Thr Lys Ser Asn Asn Asp Lys Ile Ser Ile Lys Ser
 65 70 75 80
 Lys Tyr Asp Asp Phe Lys Asn Glu Leu Gln Ile Ile Thr Asp Ile Lys
 85 90 95
 Asn Glu Tyr Cys Leu Thr Cys Glu Gly Ile Ile Thr Asn Tyr Asp Glu
 100 105 110
 Val Tyr Ile Ile Tyr Glu Tyr Met Glu Asn Asp Ser Ile Leu Lys Phe
 115 120 125
 Asp Glu Tyr Phe Phe Val Leu Asp Lys Asn Tyr Thr Cys Phe Ile Pro
 130 135 140
 Ile Gln Val Ile Lys Cys Ile Ile Lys Ser Val Leu Asn Ser Phe Ser
 145 150 155 160

Tyr Ile His Asn Glu Lys Asn Ile Cys His Arg Asp Val Lys Pro Ser
 165 170 175
 Asn Ile Leu Met Asp Lys Asn Gly Arg Val Lys Leu Ser Asp Phe Gly
 180 185 190
 Glu Ser Glu Tyr Met Val Asp Lys Lys Ile Lys Gly Ser Arg Gly Thr
 195 200 205
 Tyr Glu Phe Met Pro Pro Glu Phe Phe Ser Asn Glu Ser Ser Tyr Asn
 210 215 220
 Gly Ala Lys Val Asp Ile Trp Ser Leu Gly Ile Cys Leu Tyr Val Met
 225 230 235 240
 Phe Tyr Asn Val Val Pro Phe Ser Leu Lys Ile Ser Leu Val Glu Leu
 245 250 255
 Phe Asn Asn Ile Arg Thr Lys Asn Ile Glu Tyr Pro Leu Asp Arg Asn
 260 265 270
 His Phe Leu Tyr Pro Leu Thr Asn Lys Lys Ser Thr Cys Ser Asn Asn
 275 280 285
 Phe Leu Ser Asn Glu Asp Ile Asp Phe Leu Lys Leu Phe Leu Arg Lys
 290 295 300
 Asn Pro Ala Glu Arg Ile Thr Ser Glu Asp Ala Leu Val Thr Ala Lys
 305 310 315 320

<210> 121
 <211> 387
 <212> PRT
 <213> Plasmodium falciparum

<400> 121
 Met Gly Ala Phe Glu Asn Ser Leu Lys Asp Ala Leu Arg Ala Lys Glu
 1 5 10 15
 Leu Asp Glu Asn Asn Leu Lys Ser Tyr Tyr Arg Ile Cys Glu Ala Tyr
 20 25 30
 Lys Ser Leu Lys Asp Ile Asp Asn Tyr Glu Lys Tyr Leu Gln Leu Tyr
 35 40 45
 Asn Met Lys Lys Asn Lys Lys Glu Asn Asn Glu Ser Asn Lys Ser Asn
 50 55 60
 Ile Asp Lys Lys Leu Leu Thr Glu Lys Asn Arg Lys Asn Glu Glu His
 65 70 75 80
 Asn Lys Asn Lys Asn Ile Asn Asn Asn Tyr Tyr Asn Asn Asp Phe Glu
 85 90 95
 Lys Glu Gln Asn Gln Gln Arg Lys Asp Lys Ile Ile Thr Ser Asn Glu
 100 105 110
 Leu Ile Asp Ile Cys Asp Asn Ile Glu Glu Lys Asn Pro Phe Leu Phe
 115 120 125
 Phe Pro Asn Ser Gln Leu Asn Asn Thr Ile Ser Asn Ile Gln Phe Glu
 130 135 140
 Lys Lys Lys Tyr Lys Asn Asn Phe Leu Ile Glu Glu Val Tyr Asp Phe
 145 150 155 160

Lys Asn Leu Lys Asn Gln Asn Ser Leu Gln Ser Thr Asn Thr Lys Lys
 165 170 175
 Cys Ile Val His Asn Glu Glu Lys Ile Asn Tyr His Asp Ile Tyr Asp
 180 185 190
 Asp Ile Lys Thr Cys Leu His Thr Phe Lys His Phe Phe Phe Asp Asn
 195 200 205
 Val Pro Lys Val Ile His Ile Glu Lys Glu Asn Lys Ile Asn Met Gln
 210 215 220
 His Thr Asn Tyr Asp Ile His Ser Met Lys Asn Gln Ala Asp His Phe
 225 230 235 240
 Phe Ser His Lys Gln Tyr Tyr Ala Ala Leu Asn Met Tyr Asn Glu Ile
 245 250 255
 Met Glu Lys Cys Lys Ser Glu Glu Ser Val Phe Tyr Cys Ser Leu Leu
 260 265 270
 Ser Asn Arg Ser Ser Cys Phe Ile Lys Met Lys Lys Ile Ile Ser Ser
 275 280 285
 Leu Cys Asp Ile His Gln Ala Ile Lys Ile Leu Leu Leu Leu Leu Glu
 290 295 300
 Lys His Val Glu Tyr Ile Lys Lys Asp Asn Arg Thr Glu Leu Glu Asp
 305 310 315 320
 Lys Asp Ile Asn Lys Met Phe Glu Ser Ile Asp Ile Gln Thr Phe Lys
 325 330 335
 Asn Ile Glu Gly Ile Tyr Met Lys Thr His Lys Leu Leu Ile Arg Leu
 340 345 350
 Leu Phe Arg Tyr Ala Ser Tyr Ser Tyr Ile Asn Pro Lys Tyr Phe Lys
 355 360 365
 Val Phe Ser Leu Asn Glu Val Lys Asn Lys Asn Ile Tyr Ile Arg Lys
 370 375 380
 Ile Asn Lys
 385

<210> 122
 <211> 2013
 <212> PRT
 <213> Plasmodium falciparum

<400> 122
 Met Ala Asn Cys Arg Tyr Asn Ser Ser Leu Pro Phe His Phe Ile Ser
 1 5 10 15
 Asp Asn Ile Phe Cys Phe Leu Lys Asp Gly Tyr Ile Cys Phe Met Asn
 20 25 30
 Leu Leu Asn Asn Glu Lys Lys Tyr Leu Tyr Ile Thr Cys Ser Gln Asp
 35 40 45
 Glu Gly Tyr Val Ala Gln Tyr Tyr Phe Asp Val Val Lys Cys Arg Tyr
 50 55 60
 Glu Lys Lys Glu Glu Asp Cys Asn Lys Asn Met Thr Ile Asn Ile Met
 65 70 75 80
 Leu Leu Gln Asn Glu Asn Lys Lys Ile Ile Lys Glu Thr Cys Tyr Ile
 85 90 95

Lys Asn Val Val Thr Asn Lys Ile Tyr His Thr Leu Phe Leu Val Ile
 100 105 110
 Asn Lys His Tyr His Asn Ile Leu Cys Ser Leu Ser Phe Glu Asn Asn
 115 120 125
 Ser Phe Glu Ile Leu Asn Thr Asn Phe Val Lys Thr Phe Lys Gly Lys
 130 135 140
 Ile Lys Ser Met Ala Cys Thr Asn Asn Asn Ile Phe Val Leu Ile Lys
 145 150 155 160
 Lys Lys Lys Lys Ile Ile Asn Lys Asn Lys Asn Asn Gln Met Lys Ser
 165 170 175
 Lys Ile Leu Asn Gln Asn Val Leu Val Ser Lys His Thr Leu Asp Arg
 180 185 190
 Ser Leu Leu Leu Met Lys Gly Glu Asn Asp Val Asn Val Ile Cys Glu
 195 200 205
 Ser Lys Lys Glu Lys Lys Lys Lys Lys Lys Lys Thr Asp Asn Lys Asn
 210 215 220
 Glu Lys Lys Lys Gly His Met Glu Ile Lys Asp Val Asn Glu Lys Ile
 225 230 235 240
 Asn Glu Lys Ile Asn Glu Glu Lys Asn Glu Lys Ile Asn Glu Glu Lys
 245 250 255
 Asn Glu Glu Lys Asn Glu Glu Lys Asn Glu Lys Ile Asn Glu Glu Lys
 260 265 270
 Asn Glu Glu Lys Asn Glu Lys Ile Asn Glu Glu Lys Asn Glu Asp Thr
 275 280 285
 Asn Lys Asp Pro Tyr Glu Glu Lys Glu Asn Asp Asn Ile Pro Leu Gly
 290 295 300
 Asp His His Ser Val Gln Tyr Asn Ile Phe Thr Phe Ser Ile Leu Asn
 305 310 315 320
 Lys Lys Glu Pro Asp Leu Lys Lys Ile Gln Phe Ser Asn Ile Ile Leu
 325 330 335
 Pro Ile Lys Lys Met Ile Ile Cys Pro Tyr Asp Glu Lys Ile Ile Ile
 340 345 350
 Leu Leu Ser His Lys Ser Ile Val Tyr Ile Ile Thr Asn Lys Asn Asn
 355 360 365
 Asp Asp Leu Lys Asn Met Phe Ile Ile Lys Glu Leu Ile Phe Asn Ser
 370 375 380
 Pro Ile Ile Thr Thr Thr Trp Ile Asp Asn Tyr Ile Phe Leu Ile Tyr
 385 390 395 400
 Phe Leu Asn Asn Glu Leu Ile Phe Leu Ser Phe Ala Lys Pro Cys Arg
 405 410 415
 Asn Leu Tyr Phe Tyr Lys Cys Ile Asn Asn Tyr Ser His Ile Thr Ser
 420 425 430
 Phe Phe Tyr Lys Ser Arg Asn Leu Tyr Ile Ser Phe Lys Thr Lys Glu
 435 440 445
 Ile Val Cys Phe Lys Ile Arg Tyr Tyr Glu Ile Pro Leu Thr Val Phe
 450 455 460
 Lys Lys Ile Gln Thr Thr Glu Gly Asn Tyr Ile Asp Ala Lys Tyr Leu
 465

465	470								475				480			
Phe Arg Lys Arg	Pro 485	Arg Tyr Ile Asn	Thr 490	Asn His Asn Gln	Ser 495	Asn										
Ala Lys Asp Asp	Lys 500	Asp Gly Asn Asp	Val 505	Ile Arg Glu Glu	Glu 510	Asp										
Phe Leu Arg Asn	Asn 515	Asn Lys Asn Phe	Ser 520	Asp Val Lys Lys	Arg 525	Lys										
Lys Arg Asn Asp	Lys 530	Asn Asn Tyr Glu	Ile 535	Ile Phe Asn Asn	Ile 540	Leu										
Arg Glu Ile Lys	Thr 545	Leu Glu Asn Lys	Ile 550	Ser Asn Asn Asp	Tyr 555	Asn										
Ile Phe Tyr Glu	Asp 565	Gly Glu Ile Asn	Lys 570	Asp Glu Leu Lys	Asn 575	Arg										
Leu Ser Ala Arg	Ser 580	Leu Ser Val Tyr	Asn 585	Lys Tyr Phe Asn	Leu 590	Asn										
Leu Leu Gly His	Asn 595	Asn Asn Lys Lys	Trp 600	Ile Arg Gln Asp	Ile 605											
Arg Asn Asn Met	Tyr 610	His Asn Lys Tyr	Asn 615	Cys Val Glu Glu	Asp 620	Val										
Cys Ile Asn Arg	Tyr 625	Ile Glu Lys Glu	Ser 630	Ile Phe Tyr Glu	Tyr 635	Asp										
Asn Asn Asn Asn	Asp 645	Asn Met Leu Trp	Ser 650	His Leu Tyr Phe	Leu 655	Lys										
Lys Lys Lys Lys	Lys 660	Lys Lys Phe Asp	Asn 665	Phe His Tyr Asn	Asp 670	Glu										
Val Ile Lys Leu	Leu 675	Asp Phe Val Ser	Ile 680	Ile Asn Leu His	Lys 685	Tyr										
Ile Leu Asn Asn	Ile 690	Thr Ser Phe Tyr	Ile 695	Met Ser Lys Tyr	Leu 700	Phe										
Val Leu Leu Asp	Asn 705	Gly Leu Leu Tyr	Tyr 710	Thr Lys Lys Asn	Asp 715	Asp										
Gly Lys Ile Tyr	Asp 725	Phe Leu Glu Leu	Ser 730	Asn Phe Tyr Ile	Cys 735	Tyr										
Tyr Lys Asn Ile	Asn 740	Lys Ile Val Asp	Ile 745	Lys Ile Ile Asn	Glu 750	His										
Asp Ile Tyr Tyr	Met 755	Asp Lys Lys His	Ile 760	Leu Lys Asn His	Ser 765	Leu										
Lys Asn Asn Tyr	Leu 770	Asn Ile Ile Asn	Thr 775	Lys Glu Lys Ile	Gln 780	Ser										
Tyr Asn Ile Phe	Ser 785	Met Leu Glu Asn	Cys 790	Thr Cys Ile Phe	Leu 800	Ser										
Leu Asn Asp Gly	Ser 805	Phe Tyr Phe Ile	Asn 810	Ile Thr Lys His	Lys 815	Ile										
Leu Leu Tyr Glu	Asn 820	Leu Gln Asn Phe	Ser 825	Asn Leu Gly His	Asn 830	Gln										
Ile Tyr Cys Asn	Phe 835	Lys Lys Asn Lys	Tyr 840	Ile Gln Tyr Ser	Val 845	Phe										

Asn Lys Leu Asn Glu Tyr Ile Phe Asn Gly Tyr Phe Tyr Val Gln Gln
 850 855 860
 Tyr Ile Ile Phe Phe Phe Leu Ile Tyr Ser Thr Ser His Lys Lys Phe
 865 870 875 880
 Phe Ile Tyr Leu Val Glu Asn Ile His Ile Tyr Ile Leu Phe Lys Lys
 885 890 895
 Ile His Gln Thr Asn Ile Leu Tyr Lys Asn Lys Glu Lys Asn Gln Asn
 900 905 910
 Gln Asn Glu Asn Ile Ile Asn Met Lys Arg Gln Lys Glu Ser Ser Asn
 915 920 925
 Tyr Ile Leu Tyr Asn Phe Tyr Leu Tyr Lys Thr Leu Asn Lys Asp Tyr
 930 935 940
 Val Cys Leu Leu Cys Ser Asp Lys Ser Val Ser Tyr Phe Tyr Met Phe
 945 950 955 960
 Phe Phe Asp Leu Pro Arg Glu Glu Glu Ile Lys Met Tyr Ile Ser Asp
 965 970 975
 Lys Lys Lys Lys Lys Lys Ile Asn Asn Ser Asn Asp Asn Lys Lys Tyr
 980 985 990
 Ile Tyr Asn Arg Ser Asn Lys Asp Asn Asp Asn Asn Tyr Lys Glu Asn
 995 1000 1005
 Gln Lys Asn Glu Val Glu Asn Tyr His Tyr Asp Asp Asp Asp Asp Asp
 1010 1015 1020
 Asn Lys Ser Tyr Pro Leu Tyr Thr Arg Asn Ile Phe Phe Cys Ser Ile
 1025 1030 1035 1040
 Lys Asn Thr Asn Ile Val Tyr Ala Lys Cys Ile Gly Asn Tyr Met Ile
 1045 1050 1055
 Val Ala Asp Tyr Tyr Leu Asn Ile Thr Phe Tyr Tyr Ile Lys Asp Asn
 1060 1065 1070
 Phe Asn Asn Tyr Tyr Met Ser Ser Gly Glu Thr Pro Ser Ser Phe Phe
 1075 1080 1085
 Val Ser His Lys Leu Glu Glu Pro Cys Val Tyr Lys Met Lys Lys Lys
 1090 1095 1100
 Lys Glu Lys Gln Lys Tyr Thr Cys Asn Met Lys Glu Glu Ser Glu Ser
 1105 1110 1115 1120
 Lys Ile Asp Tyr Ser Thr Asn His Asn Met Gln Asn Met Met Gln Arg
 1125 1130 1135
 Phe Phe Phe Leu Lys Arg Lys Lys Leu Lys Asn Lys Thr Glu Phe Asn
 1140 1145 1150
 Asp Asn Met Ile Lys Glu Asp Lys Leu Glu Glu Lys Ile Asn Glu Asp
 1155 1160 1165
 Phe Val Ile Thr Glu Glu Gly Glu Lys Lys Ser Asn Lys Lys Ile Lys
 1170 1175 1180
 Asn Asn Thr Gln His Asn Asp Asn Asn Asn Asn Asn Asp Val Phe Ile
 1185 1190 1195 1200
 Cys Asn Ser Leu Tyr Glu Leu Leu Leu Asn Lys Glu Lys Ser Phe Phe
 1205 1210 1215

Leu Asn Ile Lys His Gly Lys Leu Lys Tyr Ile Asn Glu Arg Met His
 1220 1225 1230
 Thr Ser Glu Leu Thr Tyr Ile Asp Ile Val Thr Thr Asn Asn Ile Leu
 1235 1240 1245
 Ile Cys Ile Ser Phe Asn Ser Val Asp Tyr Pro Leu Glu Ile Asn Pro
 1250 1255 1260
 His Ile Asn Ile Arg Tyr Met Pro Tyr Leu Asn Asn Asp Ile Gln Tyr
 1265 1270 1275 1280
 Tyr Tyr Pro Leu Ile Ile Lys Gly Asn Asn Asn Tyr Glu Asn Asn Asn
 1285 1290 1295
 Asn Met Tyr Asp Leu Phe Leu Ile Lys Lys Lys Asn Phe Leu Leu Leu
 1300 1305 1310
 Arg Asn Asn Ile Lys Glu Asp Glu Glu Ala Ile Ile Lys Gln Lys Glu
 1315 1320 1325
 Lys Asp His Ser Thr Ile Cys Asn Pro Lys Leu Ile Gln Asn Gln Gln
 1330 1335 1340
 Asn Asp Gln Thr Tyr Asn Thr Lys Cys Val Glu Glu Asn Val Phe Asn
 1345 1350 1355 1360
 Val Thr Ile Asn Ser Asn Glu His Ile Ser Phe Tyr Leu Ser Lys Trp
 1365 1370 1375
 Ile Ile Glu Asp Asn Asn Thr Ser Tyr Tyr Ile Asn Asp Ser Leu Ile
 1380 1385 1390
 Lys Asn Met Asn Ile Val Phe Leu Lys Ile Lys Asn Asp Ile Ser Gln
 1395 1400 1405
 Asn Tyr Thr Asn Arg Lys Arg Lys Asn Phe Phe Glu Asp Ile Val Cys
 1410 1415 1420
 Met Glu Lys Lys Tyr Ile Glu Asn Asn Lys Asn Asn Asn Glu Lys Met
 1425 1430 1435 1440
 Asn Ile Lys Val Asp Ile Asn Ile Asn Met Asn Met Pro Thr His Tyr
 1445 1450 1455
 Asn Ile Leu Lys Asn Lys Ile Leu Leu Leu Asn Asp Val Glu Lys Thr
 1460 1465 1470
 Lys Cys Ile Glu Pro Gln Asn Asn Asn His Asn Ile Asn Asn Lys Glu
 1475 1480 1485
 Ile Glu Phe Lys Gln Ile Ser Asn Met Asp Lys Leu Asn Glu Glu Lys
 1490 1495 1500
 Thr Tyr Ile Leu Lys Asp Lys Asn Tyr Ile Ile His Asn Lys Asn Thr
 1505 1510 1515 1520
 Asn Tyr Phe Phe Asp Asn Glu Thr Ile Ile Phe Thr Phe Ile Lys Asp
 1525 1530 1535
 Asn Ser Ser Gln Asn Ile Ser Leu Lys Lys Cys Leu Lys Ile Tyr Gln
 1540 1545 1550
 Asn Lys Tyr Tyr Leu Gln Glu Lys Tyr Glu Lys Lys Lys Lys Leu Glu
 1555 1560 1565
 Lys Lys Ile Thr Tyr Leu Arg Lys Gln Leu Asn Asp Leu Ile Lys Thr
 1570 1575 1580
 Asn Tyr Gln Asn Glu Gln Met Lys Ile Asp Arg Cys Thr Phe Phe Phe

1585	1590	1595	1600
Asp Lys Lys Tyr Ile Asn Glu Glu Asp Ile Leu Ile Tyr Glu Tyr Lys	1605	1610	1615
Lys Ile Lys Lys Lys Phe Lys Asn Thr Lys Lys Gln Lys Leu Tyr Ile	1620	1625	1630
Ile Asn Lys Leu Gln Lys Lys Cys Ser Ile Leu Asn Lys Ile Asp Phe	1635	1640	1645
Leu Ser Ala Phe Lys Lys Asn Leu Tyr Val Val Asn Phe Tyr Asn Asn	1650	1655	1660
Gln Thr Gly Tyr Lys Phe Cys Asn Tyr Ile Ser Tyr Pro Ser Asn Lys	1665	1670	1675
Ser Asn His Leu Ser Asn Glu Lys Ser Asn Phe Ser Ser Tyr Asn Asn	1685	1690	1695
Leu Ser Ser Tyr Asn Asn Phe Ser Ser His His Asn Leu Ser Ser His	1700	1705	1710
His Asn Leu Ser Ser His His Asn Leu Ser Ser His His Asn Leu Ser	1715	1720	1725
Ser His His Asn Leu Ser Ser His His Asn Leu Ser Ser His Asn Asn	1730	1735	1740
Leu Ser Ser His His Asn Leu Ser Ser His Asn Asn Leu Ser Ser His	1745	1750	1755
Asn Asn Leu Ser Ser Tyr Asn Leu Cys Ser Ser Pro Tyr Thr Asp Lys	1765	1770	1775
Ile Lys Cys Leu Arg Phe Leu Gln Ile Lys Glu Phe Phe Phe Leu His	1780	1785	1790
Asn Ile Asp Lys Asn Asn Thr Leu Phe Phe Leu Lys Asp Tyr Thr Asp	1795	1800	1805
Tyr Ile Asp Arg Tyr Leu Gln Asp Phe Ser Ser Leu Tyr Phe Tyr His	1810	1815	1820
Tyr Tyr Pro Cys Thr Asn Ile Asn Leu Asn Phe Leu Tyr Ala Asn Leu	1825	1830	1835
Phe Asn Val Asn Pro Leu Gln Gly Glu Val Asp Asp Leu Arg Trp Asn	1845	1850	1855
Tyr Leu Leu Tyr Ser Pro Tyr Glu Leu Phe Thr Asn Ser Arg Lys Arg	1860	1865	1870
Leu Gln Cys Tyr Ile Leu Lys Ile Leu Ile Glu Gln Phe Gln Asn Asp	1875	1880	1885
Phe Glu Ile Leu Lys Glu Glu Lys Asn His Cys Leu Lys Glu Ile Asn	1890	1895	1900
Phe Leu Ile Asn Lys Leu Lys Ser Ser Leu Gln Asp Val Glu Lys Tyr	1905	1910	1915
Met Ser Tyr Asn Phe Ser Tyr Tyr Met Asn Met Lys Leu Phe Ile Lys	1925	1930	1935
Asn Gln Pro Trp Tyr Asp Lys Gly Arg Ile Tyr Asn Ile Pro Asp Ala	1940	1945	1950
Ile Lys Lys Asp Leu Leu Leu Lys Ile Gln Leu Asn Lys Leu Asn Met	1955	1960	1965

Glu Thr Lys Lys Asp Ile Asn Lys Glu Asn Tyr Ile Leu Gln Thr Lys
 1970 1975 1980

Tyr Asn Glu Gln Lys Glu Asn Ile Asn Val Asp Thr Ser Thr Gln Tyr
 1985 1990 1995 2000

Tyr Asn Leu Lys His Asp Met Lys Asn Thr Pro Ser Thr
 2005 2010

<210> 123

<211> 154

<212> PRT

<213> Plasmodium falciparum

<400> 123

Met Thr Phe Leu Ser Ser Pro Ser Thr Asn His Met Ile Thr Asn Leu
 1 5 10 15

Thr Lys Arg Thr Asn Glu Phe Gln Ser Lys Ile Asp Gly Met Leu Asn
 20 25 30

Asn Ile Ser Thr Glu Ser Leu Pro Phe Gln Lys Lys Ser Phe Met Cys
 35 40 45

Cys Val Asn Cys Phe Asp Thr Tyr Asn Thr Asp Phe Glu Thr Ile Gly
 50 55 60

Lys Cys Val Asn Asn Cys Gln Lys Gly Thr Glu His Phe Val Gln Val
 65 70 75 80

Val Gln Asn Glu Met Gln Asn Leu Gln Asn Asn Leu Gln Ser Cys Gln
 85 90 95

Gln Ser Cys Phe Tyr Lys Tyr Ser Pro Asn Tyr Ala Lys Ser Asn Ser
 100 105 110

Asn Ile Asp Gly Pro Thr Ile Glu Lys Glu Met Glu Thr Cys Val Val
 115 120 125

Lys Cys Phe Asp Lys His Glu Pro Met Leu Pro Glu Ile Ser Asp Arg
 130 135 140

Leu His Lys Thr Leu Lys Glu Glu Met Lys
 145 150

<210> 124

<211> 669

<212> PRT

<213> Plasmodium falciparum

<400> 124

Met Met Glu Asn Lys Val Cys Asn Tyr Ser Leu Arg Ser Arg Ile Glu
 1 5 10 15

Ser Ile Phe Lys Gly Tyr Asn Asn Met Ile Asn Ser Asn Glu Glu Leu
 20 25 30

Ile Gln Asn Ser Asp Val Glu Arg Asp Cys Asn Thr Glu Thr Cys Leu
 35 40 45

Asn Lys Glu Lys Tyr Met Asn Lys Asn Glu Glu Cys Ile Arg Ile Lys
 50 55 60

Arg Lys Ile Ser Asn Asp Asp Asn Met Ser Ile Phe Ile Lys Gly Arg
 65 70 75 80

Lys Tyr Leu Phe Ile Glu Asn Tyr Thr Ser Val Ile Tyr Glu Lys Cys

85								90				95			
Glu	Asp	Lys	Leu	Asn	Ile	Ile	Leu	Ala	Asn	Lys	Tyr	Leu	Glu	Gln	Gly
			100					105				110			
Ile	Ile	Glu	Val	Gln	Leu	Lys	Gly	Asn	Val	Thr	Phe	Ile	Ile	Pro	Cys
		115					120					125			
Cys	Leu	Asn	Lys	Asn	Ile	Leu	Ser	Cys	Phe	Leu	Pro	Gln	Leu	Glu	Arg
	130					135					140				
Gly	Leu	Tyr	His	Leu	Phe	Phe	Phe	Phe	Asn	Lys	Glu	Arg	Met	Phe	Ile
145					150					155					160
Lys	Leu	Leu	Arg	Pro	Gly	Ser	Glu	Leu	Ser	Asp	Asp	Ile	Lys	Ser	Ile
				165					170					175	
Pro	Leu	His	Val	Ile	Glu	Ile	Thr	Asp	Phe	Ser	His	Gly	Leu	Lys	Lys
			180					185					190		
Asn	Lys	Ile	Thr	Asp	Lys	Asn	Lys	Glu	Tyr	Ile	Ile	Asn	Ser	Thr	His
		195					200						205		
Asn	Asn	Phe	Tyr	Thr	Asn	Lys	Glu	Leu	Ile	Lys	Leu	Tyr	Asn	Asn	Ile
	210					215					220				
Tyr	Asn	Asn	Tyr	Asn	Asn	Ile	Tyr	Asn	Asp	Glu	Tyr	Lys	Lys	Asn	Asn
225					230					235					240
Lys	Ile	Ser	Leu	Gln	Lys	Asn	Phe	Tyr	Leu	His	Tyr	Asn	Asn	Glu	Glu
				245					250					255	
His	Phe	Tyr	Asn	Phe	Leu	Asn	Ser	Tyr	Lys	Asp	Gln	Phe	Ile	Asp	His
			260						265				270		
Ser	Ser	Phe	Thr	Thr	Lys	Met	Arg	Asn	Ser	Tyr	Gln	His	Asn	Lys	Asp
		275					280					285			
Ile	Glu	Arg	Glu	Lys	Arg	Glu	Lys	Asn	Gln	Lys	Asn	Ser	Leu	Asp	Ile
	290					295					300				
Asn	Asn	Met	Asn	Phe	Ile	Ser	Gln	Leu	Asn	Leu	Glu	Lys	His	Val	Ala
305					310					315					320
Gln	Ser	Arg	Ile	Pro	Ile	Leu	Tyr	Lys	Arg	Leu	Leu	Tyr	Asp	Asn	Cys
				325					330					335	
Ile	Tyr	Glu	Asn	Lys	Met	Val	Ile	Met	His	Phe	His	Thr	Lys	Ile	Phe
			340					345					350		
Glu	Tyr	Asn	Pro	Phe	Asn	Ile	Leu	Ser	Thr	His	Ile	Phe	Thr	Lys	Ser
		355					360					365			
Glu	Ile	Glu	Lys	Asp	Gly	Tyr	Ile	Ile	Phe	Ala	Phe	Asn	Ile	Ile	Pro
	370					375				380					
Ile	Thr	Ile	Asn	Thr	Asn	Lys	Asn	Lys	Ser	Lys	Tyr	Ile	Asn	Ser	Tyr
385					390					395					400
His	Asn	Glu	Asp	Ile	Tyr	Lys	Lys	Lys	Asn	Ile	Asn	Lys	Lys	Ile	Asn
				405					410					415	
Tyr	Ser	Ser	Asn	Ile	Leu	Asn	Ser	Ser	Gly	Glu	Lys	Lys	Glu	Glu	Ile
			420					425					430		
Gly	Asn	Ser	Tyr	Met	Ser	Thr	Leu	Phe	Ile	Leu	Asn	Ser	Asp	Glu	Arg
		435					440					445			
Asn	Cys	Val	Asp	Ile	Arg	Leu	Trp	Lys	Tyr	Ile	Lys	Thr	Val	Glu	Cys
	450					455					460				

Asn Lys Asn Asp Ile Ser Asn Asn Phe Tyr Leu Ser Lys Asn Asn Tyr
 465 470 475 480
 Lys Asn Val Val Cys Pro Ile Ser Pro Gln Leu Ile Asn Asn Lys Asn
 485 490 495
 Ile Phe Asn Arg Tyr Ser Glu Gly Leu Lys Ile Ser Asp Lys Val Ser
 500 505 510
 Ile Phe Phe Glu Asp Trp Asn Glu Asp Ile Leu Pro Val Gln Lys Phe
 515 520 525
 Val Asn Ser Phe Glu Tyr Asp Ile Pro Tyr Lys Lys Leu Asn Glu Leu
 530 535 540
 Ser Asn Tyr Val Glu Asp Ile Asn Gly Asp Ile Leu Leu Tyr Asn Asp
 545 550 555 560
 Phe Asn Glu Asn Asp Lys Asn Asp His Val Cys Asp Asp Thr Ile Lys
 565 570 575
 Ser Gln Asn Glu Ser Ile Asn Gly Tyr Gln Tyr Asn Asn Asn Glu Ser
 580 585 590
 Glu Leu Ile Thr Asn Thr Ser Met Asn Gln Asn Asn Phe Tyr Ile Lys
 595 600 605
 Asp Met Glu Lys Asn Lys Ile Asn Asn Lys Asp Lys Met Asn Lys Ile
 610 615 620
 Ser Met Lys Tyr Leu Phe Asn Asn Phe Val Ser Phe Val Leu Ile Ile
 625 630 635 640
 Asp Glu Lys Ile Tyr His Ser Val Thr Pro Ile Asn Lys Phe Ile Leu
 645 650 655
 Leu Phe Ile Ile Asn Tyr Trp Met Asn Phe Val Glu Lys
 660 665

<210> 125

<211> 1166

<212> PRT

<213> Plasmodium falciparum

<400> 125

Met Ser Glu Glu Ser Ala Lys Ser Leu Tyr Glu Lys Glu Lys Lys Ile
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 Gln Ala Leu Ser Lys Ile Tyr His Ile Lys Phe Glu Thr Leu Leu Ile
 20 25 30
 Tyr Ile Ile Ile Pro Lys Thr Thr Thr Lys Ser Leu Cys Tyr Lys Asp
 35 40 45
 Phe Phe Asp Asp Leu Ile Glu Ile Lys Lys Tyr Ile Asn Ile Glu Glu
 50 55 60
 Asn Asp Glu Cys Val Lys Thr His Val Lys Val Asn Glu Glu Ile Gln
 65 70 75 80
 Gln Arg Lys Thr Asn His Asp Asn Ile Asn Asn Asn Asp Val Asn Asp
 85 90 95
 Asp Asn Ile Asn Asn Asn Pro Ile Asn Asp Asp Asn Ile Ser Asn Asn
 100 105 110
 His Ile Asp Asp Asp Asn Ile Asn Asn Asn His Ile Asn Asp Asp Asn
 115 120 125

Ile Asn Asn Asn Asp Val Asn Asp Asp Asn Ile Asn Asn Asn His Leu
 130 135 140
 Asn Asp Asp Asn Ile Asn Asn Asn His Ile Asn Asp Asp Asn Ile Asn
 145 150 155 160
 Asn Asn His Ile Asn Asp Asp Asn Ile Asn Asn Asn His Ile Asn Asp
 165 170 175
 Asp Asn Ile Asn Asn Asn Tyr Cys Asn Asn Asp Val Tyr Asp Asn Ile
 180 185 190
 Ser Asn Val His Ile Ile Cys Asn Asn Ser Pro Lys Lys Glu Lys Glu
 195 200 205
 Lys Glu Asn Val Glu Tyr Gln Glu Ile Gln Gly Asp Lys Asn Ile Phe
 210 215 220
 Ile Lys Asn Leu Leu Val Phe Ile Asn Asn Leu Ile Ile Leu Tyr Phe
 225 230 235 240
 Ser Lys Ser Asp Leu Ile Asp Val Cys Ile Asn Arg Arg Ser Tyr Asn
 245 250 255
 Lys Cys Gly Phe Tyr Ala Cys Asp Asn Thr Phe Leu Asn Asn Ile Asn
 260 265 270
 Arg Ser Lys Tyr Lys Ile Asp Thr Lys Ser Lys Arg Ile Tyr Leu Arg
 275 280 285
 Glu Tyr Tyr Asp Leu Phe Cys Ser Thr Asn Cys Met Asn Tyr Asn Leu
 290 295 300
 Gly Leu Leu Lys Leu Ile Asn Gln Asn Asn Lys Asn Asn Thr Glu Glu
 305 310 315 320
 Ile Asn Tyr Lys Lys Lys Ser Gln Leu Ile His Ile Met Phe Leu Thr
 325 330 335
 Phe Phe Pro Phe Phe Lys Leu Tyr Asn Leu Thr Asp Leu Leu Asn Asn
 340 345 350
 Ile Asn Lys Tyr Asp Ile Gln Cys Asn Lys Ile Cys Lys Ile Gln Thr
 355 360 365
 Asn Ile Asn Thr Gln Ser Ile Asp Leu Gln Gln Thr Asp Asn Asn Ile
 370 375 380
 Ile Lys Met Asn Lys Thr Asn Glu Arg Lys Glu Thr Lys Lys Lys Lys
 385 390 395 400
 Ile Tyr Asn His Val Thr Asn Ile Lys Ile Lys Glu His Tyr His Asp
 405 410 415
 Lys Lys Gln Val Phe Ile Gln Glu Asn Ser Lys Asp Thr Ser Tyr Ile
 420 425 430
 Val Lys Lys Lys Asp Lys Ser Lys Tyr Ile Leu Ile Asn Asn Lys Asn
 435 440 445
 Asn Asn Met Glu His Lys Lys Ser Ile Leu Lys Asn Lys Lys Asp Asn
 450 455 460
 Gln Glu Asn Thr Gln Lys Thr Asn Ser Lys Asn Val Ser Phe Asn Gln
 465 470 475 480
 Asn Ile Lys Leu Tyr Gln Tyr Asn Lys Asp Asp His Val Asp Ser Tyr
 485 490 495

Ser Ile His Asp Thr Ser Val Asp Leu Gln Asn Lys Asp Glu Arg Lys
 500 505 510
 Ile Lys Lys Asn Phe Lys Glu Thr Thr Lys Arg Lys Lys Lys Phe
 515 520 525
 Tyr Met Glu Asn Lys Phe Asn Pro Phe Asn Ile Glu Asp Tyr Lys Tyr
 530 535 540
 Thr Asn Phe His Ile Asn Tyr Asn Ser Ile Lys Glu Leu Lys Glu Pro
 545 550 555 560
 Phe Glu Arg Tyr Ile Asp Asn Asp Lys Lys Tyr Glu Glu His Asn Ile
 565 570 575
 Gln Ile Glu Asp Lys Leu Ile Lys Ser Cys Asn Ile Ile Asn Asn Asn
 580 585 590
 Asn Glu Ser Val Leu Asn Lys Cys Ala His Val Leu Asn Leu Leu Ser
 595 600 605
 Ala Asp Glu His Arg Gly Lys Lys Glu Glu Lys Cys Val Thr Lys Ile
 610 615 620
 Ile Glu Glu Ile Lys Asn Glu Glu Met Glu Pro Asn Gln Glu Met Gln
 625 630 635 640
 Gln Asp Lys Asp Asn Glu Leu Lys Glu Lys Asn Asp Lys Glu Glu Lys
 645 650 655
 Asn Asp Gln Glu Glu Lys Asn Asp Gln Glu Glu Lys Asn Asp Lys Glu
 660 665 670
 Glu Lys Asn Asp Lys Glu Glu Lys Asn Asp Gln Glu Lys Lys Asn Asp
 675 680 685
 Gln Glu Glu Lys Asn Asn Val His Ile Asp Lys Gln Glu Lys Ile Asn
 690 695 700
 Glu Asn Val Glu Lys Thr Leu Asn Leu Tyr Gln Lys Tyr Ser Leu Tyr
 705 710 715 720
 Asn Leu Tyr Asp Leu Ser Lys Leu Asp Glu Ser Lys Val Val Asp Phe
 725 730 735
 Phe Tyr Asp Asn Glu Lys Glu Asn Phe Ile Asn Phe Ala Ser Gln Lys
 740 745 750
 Met Asn Glu Ile Asn Arg Lys His Asn Asp Ala Glu Arg Gly Arg Lys
 755 760 765
 Ile Arg Leu Leu Asn Ser Ser Thr Asp His Lys Arg Lys Asp Asn Lys
 770 775 780
 Ile Asn Gln Lys Lys Asn Asp Glu Asn Ser Thr Tyr Gly Glu Asn Ser
 785 790 795 800
 Thr Tyr Gly Glu Asn Ser Thr His Gly Glu Asn Ser Thr His Gly Glu
 805 810 815
 Asn Ser Thr His Gly Glu Asn Ser Thr His Gly Glu Asn Ser Thr His
 820 825 830
 Gly Glu Asn Ser Thr Tyr Gly Glu Asn Gly Thr Tyr Asp Glu Asn Ser
 835 840 845
 Thr Tyr Asp Glu Asn Cys Thr Tyr Asp Lys Asn Arg Thr Tyr Asp Glu
 850 855 860
 Asn Arg Thr Tyr Asp Glu Asn Arg Thr Tyr Asp Lys Asn Arg Thr Tyr

865	870	875	880
Asp Glu Asn Arg Thr Tyr Asp Glu Asn Arg Thr Tyr Asp Asp Lys Ser	885	890	895
Cys Val His Phe Lys Asp Asp Ile Ile Ile Asn Glu Glu Glu Cys Glu	900	905	910
Lys Thr Lys Glu Ala Asp His Arg Val Asn Glu Asp Thr Asp Asp Ile	915	920	925
Lys Leu Gln Ala Leu Leu Leu Glu Lys Lys Glu Lys Ile Arg Glu Glu	930	935	940
Tyr Ile Gln Thr Phe Lys Ser Asp Ile Ser Ile Asn Met Lys Leu Gln	945	950	955
Asp Asn Asp Lys His Glu Tyr Glu Asn Phe Asn His Leu Glu Asp Asp	965	970	975
Glu Ser Thr Tyr Asp Asp Leu Ser Tyr Asp His Phe Thr Asp Asp Glu	980	985	990
Leu Glu Asn Lys Asn Cys Phe Ser Asn Asn Val Val Lys Met Asn Glu	995	1000	1005
Asn Lys Tyr Ile Tyr Gly Arg Asn Asn Gly Leu Val Tyr Glu Asn Leu	1010	1015	1020
Ser Leu Tyr Val Val Leu Trp Asp Ile Phe Thr Asn Asn Ile Ser Lys	1025	1030	1035
Tyr Thr Val His Phe Phe Glu Lys Asn Glu Phe Ile Val Pro Lys Ala	1045	1050	1055
Ile Asn Glu Glu Glu Arg Lys Arg Arg Asn Glu Phe Ile Tyr Asn Ile	1060	1065	1070
Ser Gln Asn Met Pro Ile Tyr Ile Asn Cys Ile Ser Ser Ile Ile Val	1075	1080	1085
Asn Ile Cys Arg Thr Phe Leu Phe His Lys Pro Leu Ile Pro Phe Lys	1090	1095	1100
Lys Val Ile Tyr Lys Ser Ile Ile Cys Val Ile Ala Met Ala Ile Lys	1105	1110	1115
Leu His Lys Pro His Leu Ile Pro Ser Ser Glu Met Leu Asn Ile Lys	1125	1130	1135
Lys Ala Glu Asp Tyr Leu Ile Ile Glu Asn Lys Ile Asp Gln Glu Glu	1140	1145	1150
Leu Asn Glu Leu Cys Val Leu Phe Phe Gln Asn Asn Phe Tyr	1155	1160	1165

<210> 126

<211> 540

<212> PRT

<213> Plasmodium falciparum

<400> 126

Met Val Leu Tyr Cys Val Asn Ser Ile Leu Lys Asp Gly Tyr Arg Ile	1	5	10	15
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Met Lys Asn Asn Glu Asp Thr Ile Leu Lys Asn Ile Glu Ala Cys Lys	20	25	30
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Glu Ile Cys Asn Ile Leu Gln Thr Ser Leu Gly Pro Lys Cys Met Asn

35					40					45					
Lys	Leu	Ile	Ile	Asn	His	Ile	His	Lys	Lys	Ile	Val	Ser	Ser	Asp	Cys
50						55					60				
Ile	Thr	Ile	Leu	Asn	Asp	Met	Glu	Ile	Asn	His	Pro	Val	Val	Asn	Ile
65					70					75					80
Leu	Lys	Lys	Leu	Ser	Glu	Thr	Ile	Asn	Tyr	Glu	Tyr	Gly	Asp	Phe	Thr
				85					90					95	
Asn	Tyr	Ala	Phe	Thr	Ile	Thr	Cys	Glu	Ile	Leu	Asp	Lys	Ala	Ser	Phe
			100					105					110		
Leu	Ile	Gln	Gln	Gly	Phe	Asn	Ile	Asn	Asp	Ile	Leu	Asn	Gly	Phe	Val
		115					120					125			
Leu	Gly	Tyr	Lys	Glu	Ile	Glu	Lys	Val	Leu	Glu	Glu	Met	Ile	Val	Trp
	130					135					140				
Lys	Val	Pro	Asn	Phe	Tyr	Glu	Glu	Lys	Glu	Leu	Ile	Lys	Val	Leu	Lys
145					150					155					160
Ser	Val	Met	Leu	Thr	Lys	Asn	Ile	Ser	Asn	Asn	Tyr	Asn	Phe	Leu	Ile
				165					170					175	
Gln	Leu	Leu	Ala	Lys	Cys	Ile	Ser	Thr	Leu	Met	Pro	Glu	Lys	Ile	Glu
			180					185					190		
Asp	Phe	Asp	Val	Asp	Asn	Ile	Arg	Val	Ser	Lys	Leu	Asn	Gly	Gly	Asn
			195				200					205			
Ile	Ile	Asp	Ser	Glu	Phe	Leu	Met	Gly	Met	Val	Ile	Ala	Arg	Glu	Ala
	210					215					220				
Asn	Gly	Ile	Ile	Lys	Lys	Lys	Glu	Asn	Ala	Asn	Val	Ile	Val	Leu	Asn
225					230					235					240
Cys	Gly	Leu	Glu	Gly	Pro	Thr	Thr	Glu	Thr	Lys	Gly	Thr	Val	Leu	Leu
				245					250					255	
His	Asn	Ala	Glu	Glu	Leu	Ile	Asn	Tyr	Thr	Lys	Gly	Glu	Glu	Leu	Gln
			260					265					270		
Met	Lys	Lys	Tyr	Ile	Asp	Asn	Phe	Lys	Lys	Ala	Asn	Val	Asp	Val	Ile
		275					280					285			
Ile	Val	Asn	Gly	Ala	Ile	Ser	Asp	Ile	Ala	Gln	His	Phe	Cys	Asp	Thr
	290					295					300				
Asn	Asn	Ile	Met	Thr	Leu	Lys	Ile	Thr	Ser	Lys	Phe	Glu	Thr	Leu	Arg
305					310					315					320
Ile	Cys	Lys	Leu	Leu	Asn	Ile	Ser	Ser	Leu	Ile	Lys	Leu	Ser	Thr	Pro
				325					330					335	
Gln	Pro	Glu	Asp	Ile	Gly	Lys	Val	Ser	Ser	Ile	Tyr	Val	Ser	Glu	Ile
			340					345					350		
Ala	Ser	Lys	Lys	Val	Thr	Ile	Ile	Asn	Ser	Lys	Asn	Lys	Lys	Val	Gly
		355					360					365			
Thr	Ile	Ile	Leu	Arg	Gly	Ala	Thr	Phe	Asn	Leu	Leu	Asp	Glu	Val	Glu
	370					375					380				
Arg	Cys	Ile	His	Asp	Gly	Ile	Asn	Ser	Ile	Lys	Asn	Ala	Ile	Lys	Gly
385					390					395					400
Asn	Ala	Phe	Leu	His	Gly	Gly	Gly	Cys	Val	Glu	Ile	Gln	Leu	Cys	Leu
				405					410					415	

Ala Leu Lys Lys Tyr Ala Asn Gln Leu Lys Gly Val Asp Asn Tyr Cys
 420 425 430
 Val Lys Ile Phe Ala Glu Ala Phe Tyr Ile Ile Pro Lys Ile Leu Ala
 435 440 445
 Arg Asn Ala Gly Tyr Asn Thr Thr Asp Val Leu Asn Glu Leu Ile Asn
 450 455 460
 Glu His Asn Lys Gly Asn Thr His Ser Cys Ile Asn Ile Asn Lys Asp
 465 470 475 480
 Ser His Ile Thr Ser Ala Gln Asn Asn His Ile Tyr Asp Asn Tyr Asn
 485 490 495
 Cys Lys Lys Tyr Ala Ile His Leu Ala Met Glu Ala Val Gln Thr Ile
 500 505 510
 Leu Lys Ile Asp Gln Ile Ile Met Ser Lys Pro Ala Gly Gly Pro Lys
 515 520 525
 Pro Arg Asp Lys Asn Pro Asp Tyr Asp Glu Ala Phe
 530 535 540

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 <211> 1438
 <212> PRT
 <213> Plasmodium falciparum

<400> 127
 Met Ala Leu Lys Ser Ile Asn Ile Ser Gly Asn Phe Glu Trp Cys Pro
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 Phe Glu Glu Tyr Lys Asn Tyr Leu Leu Cys Phe Asn Ser His Asn Leu
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 Leu Tyr Ser Asn Asn Asn Ser Leu Asn Asn Tyr Ile Tyr Leu Leu Asp
 35 40 45
 Ile Asn Leu Asn Ser Glu Ile Arg Asn Leu Glu Ile Val Asn Lys Tyr
 50 55 60
 Asn Phe Glu Asp Ala Leu Lys Tyr Asp Asn Asp Val Ile Lys Gly Gly
 65 70 75 80
 Asn Lys Lys Asn Asn Lys Asn Asn Lys Asn Asn His Asn Asn Asn Ser
 85 90 95
 Val Asn Glu Tyr Val Thr Cys Phe Glu Trp Met Asn Ser Asn Asn Phe
 100 105 110
 Val Asp Ile Asn Asn Asn Glu Glu Leu Ser Lys Gly Ile Ile Val Gly
 115 120 125
 Gly Leu Thr Asn Gly Asp Ile Val Leu Leu Asn Ala Lys Asn Leu Phe
 130 135 140
 Glu Thr Asn Arg Asn Tyr Asp Asn Phe Ile Leu Ser Lys Thr Asn Ile
 145 150 155 160
 His Asp Asn Gly Ile Asn Cys Leu Glu Tyr Asn Arg His Lys Asn Asn
 165 170 175
 Leu Ile Ala Thr Gly Gly Asn Asp Gly Gln Leu Phe Ile Thr Asp Ile
 180 185 190
 Glu Asn Leu Tyr Ser Pro Thr Ser Tyr Asp Pro Tyr Leu Asp Lys Asn
 195 200 205

Asn Leu Gln Lys Ile Thr Cys Leu Asn Trp Asn Lys Lys Val Ser His
 210 215 220
 Ile Leu Ala Thr Ser Ser Asn Asn Gly Asn Thr Val Ile Trp Asp Leu
 225 230 235 240
 Lys Ile Lys Lys Ser Ala Val Ser Phe Arg Asp Pro His Ser Arg Thr
 245 250 255
 Lys Thr Ser Ser Leu Ser Trp Leu Ser Asn Gln Pro Thr Gln Val Leu
 260 265 270
 Ile Ser Tyr Asp Asp Asp Lys Asn Pro Cys Leu Gln Leu Trp Asp Leu
 275 280 285
 Arg Asn Ser Asn Tyr Pro Ile Lys Glu Ile Ile Gly His Ser Lys Gly
 290 295 300
 Ile Asn Asn Ile Cys Phe Ser Pro Ile Asp Thr Asn Leu Leu Leu Ser
 305 310 315 320
 Ser Gly Lys Asp Val Thr Lys Cys Trp Tyr Leu Asp Asn Asn Asn Phe
 325 330 335
 Asp Ile Phe Asn Glu Ile Asn Asn Ser Ala Asn Asn Ile Tyr Ser Lys
 340 345 350
 Trp Ser Pro Tyr Ile Pro Asp Leu Phe Ala Ser Ser Thr Asn Met Asp
 355 360 365
 Thr Ile Gln Ile Asn Ser Ile Asn Asn Gly Asn Lys Met Thr Ser Lys
 370 375 380
 Tyr Ile Pro Thr Phe Tyr Lys Lys Glu Ala Gly Ile Cys Ile Gly Phe
 385 390 395 400
 Gly Gly Lys Ile Cys Thr Phe Asp Asn Ser Thr Asn Asn Met Ser Asn
 405 410 415
 Val Asn Asn Met Asn Asn Val Asn Asn Met Asn Asn Ile Asn Ser Phe
 420 425 430
 Asn Asn Asp Asn Ser Cys Asp Gly Glu Tyr Asp Ser Asn Lys Gly Lys
 435 440 445
 Asn Lys Ser Thr Gln Lys Lys Phe Leu Ile Lys Tyr His Ile Tyr Pro
 450 455 460
 Thr Asp Met Glu Leu Ile Ser Glu Ala Asp Asn Phe Glu Lys Tyr Ile
 465 470 475 480
 Thr Ser Gly Asn Tyr Lys Glu Phe Cys Glu Ser Lys Ile Asn Lys Cys
 485 490 495
 Asp Asp Asp His Glu Lys Leu Thr Trp Gln Ile Leu Gln Leu Leu Cys
 500 505 510
 Thr Ser Gln Arg Gly Asp Ile Val Lys Tyr Leu Gly His Asp Ile Asn
 515 520 525
 Asn Ile Val Asp Lys Ile Met Gln Thr Ile Gly Lys Gln Pro Gly Phe
 530 535 540
 Ile Phe Lys Thr Leu Ile Asp Glu Lys Glu Asn Asn Asn Asn Asn
 545 550 555 560
 Asn Asn Asn Ser Thr Asn Gln Met Tyr Gln Asn Asp Val Leu Leu His
 565 570 575

Asn Asp Pro Asn Leu Met Asn Asn Tyr Leu Leu Lys Asp Asn Met Asn
 580 585 590

Pro Asn Ile Met Leu Asn Asn Asn Asn Asn Ile Asn Asn Arg Thr
 595 600 605

Gly Thr Asn Val Met Tyr Ser Asn Gly Gln Asn Leu Leu Gly Asp Thr
 610 615 620

Asn His Asn Glu Glu Asn Phe Asn Gly Asn Phe Asp Ile Asp Pro Glu
 625 630 635 640

Lys Phe Phe Arg Glu Leu Gly Glu Lys Thr Glu Asn Glu Lys Ile Lys
 645 650 655

Gln Asn Glu Glu Asp Ile Ser Gly Asn Asp Glu His Leu Leu Asn Ser
 660 665 670

Ser Ile Lys Gly Lys Glu Asn Lys Thr Lys Asn Lys Lys Ser Gly Leu
 675 680 685

Gly Thr Asp Asp Asn Asn Asp Asn Gly Asp His Asn Lys Asn Glu Gly
 690 695 700

Ser Asn Ile Asn Gly Glu His Val Ser Glu His Ile Leu Asn Glu Lys
 705 710 715 720

Asn Asn Thr Asn Asn Trp Asn Leu Gly Ile Glu Ala Ile Ile Lys Glu
 725 730 735

Cys Val Leu Ile Gly Asn Ile Glu Thr Ala Val Glu Leu Cys Leu His
 740 745 750

Lys Asn Arg Met Ala Asp Ala Leu Leu Leu Ser Ser Phe Gly Gly Glu
 755 760 765

Gln Leu Trp His Lys Thr Lys Thr Ile Tyr Ile Lys Lys Gln Asn Asp
 770 775 780

Asn Phe Leu Lys Asn Ile Asn Tyr Val Leu Asp Asp Lys Leu Glu Asn
 785 790 795 800

Leu Ile Asn Asn Val Asp Leu Asn Ser Trp Glu Glu Ala Leu Ser Ile
 805 810 815

Leu Cys Thr Tyr Ala Ile Asn Asn Pro Asn Phe Asn Ser Leu Cys Glu
 820 825 830

Met Leu Ala Lys Arg Leu Gln Asn Glu Lys Phe Asp Ile Arg Ala Ala
 835 840 845

Ser Ile Cys Tyr Leu Cys Ala Cys Asn Phe Ser Glu Thr Val Glu Ile
 850 855 860

Trp Asn Asn Met Pro Ser Lys Lys Thr Ser Leu Leu Asn Val Leu Gln
 865 870 875 880

Asp Ile Val Glu Lys Met Thr Ile Leu Lys Met Ile Ile Lys Tyr Glu
 885 890 895

Asn Phe Asn Ser Ile Met Asn Gln Lys Ile Ser Gln Tyr Ala Glu Leu
 900 905 910

Leu Ala Asn Ser Gly Arg Leu Lys Ala Ala Met Thr Phe Leu Cys Leu
 915 920 925

Ile Gln His Asp Gln Ser Ile Glu Ser Leu Ile Leu Arg Asp Arg Ile
 930 935 940

Tyr Asn Ser Ala Asn His Val Leu Cys Gln Gln Ile Lys Pro Pro Ile

945	950	955	960
Ser Pro Phe Gln Ile Val Asp Ile Lys Pro Ser Pro Asn Val Tyr Gln	965	970	975
Asn Asn Met Tyr Asn Asn Asn Asn Asn Asn Asn Ile Asn Ile Asn	980	985	990
Ser Ser Ser Asn Asn Asn Asn Asn Asn Asn Asn Lys Val Leu Ser	995	1000	1005
Ser Met His His Pro Met Gln Gln Phe Asn Gln Cys Asn Val Asn Lys	1010	1015	1020
Met Tyr Thr Ser Thr Ser Asn Ile Ile Asn Asn Asn Thr Met Asn Ser	1025	1030	1035
Asn Phe Lys Ser Val Ile Pro Pro Pro Leu Pro Met Asn Thr Gln Met	1045	1050	1055
Asn Asn Ser Thr Ser Ser Ile Gln Pro Pro Pro Ser Val Pro Pro Thr	1060	1065	1070
Lys Phe His Thr Gln Ile Ile Asn Asn Thr Met Asn Ser Arg Ser Ser	1075	1080	1085
Ile Ala Thr Thr Thr Lys Asn Tyr Pro Thr Ser Asn Leu Asn Ser Val	1090	1095	1100
Ile Pro Thr Ser Met Asn Asn Met Asn Thr Asn Ile Ser His Gly Asn	1105	1110	1115
Asn Val Thr Pro Pro Tyr Met Ser Gln Thr Asn Val Ala Val Pro Asn	1125	1130	1135
Met Asn Asn Asn Asn Asn Asn Asn Asn Thr Met Asn Pro Thr Tyr Pro	1140	1145	1150
Ser Leu Pro Lys Phe Pro Asn Tyr Asn Leu Asn Ser Gln Val Gln Gln	1155	1160	1165
Asn Ser Ile Ile Pro Glu Lys Gln Leu Thr Ser Pro Met Phe Ser Ser	1170	1175	1180
Asn Ser Tyr Gly Asn Ile Asn Lys Thr His Thr Thr Asn Asn Ala Val	1185	1190	1195
Pro Pro Pro Pro Asn Val Thr Ser Ser Val Val Thr Pro Pro Met Pro	1205	1210	1215
Ser Asn Gln Leu Asn Asn Thr Arg Ser Ser Phe Ala Asp Ile Gln Asn	1220	1225	1230
Val Val Ser Pro Pro Arg Asn Lys Asn Gln Ser Ile Ser Ser Thr Ala	1235	1240	1245
Asn Leu Asn Tyr Gln His Asp Asn Gln Phe Asn Lys Arg Glu Cys Met	1250	1255	1260
Glu Gln Pro Val Tyr Pro Met Thr Asn Gln Ser Ser Met Phe Ser Met	1265	1270	1275
Asn Asn Thr Met Gln Lys Lys Asn Val Pro Gly Gly Phe Gln Asp Asn	1285	1290	1295
Thr Ser Gln Met Asn Tyr Gly Met Gln Pro Thr Gly Ser Pro Pro Pro	1300	1305	1310
Ser Ser Ile Lys Leu Ile Ser Ile Tyr Leu Gly Ser Thr Thr Gln Ser	1315	1320	1325

Thr Ala Asn Glu Asn Lys Lys Ile Gln Thr Ala Thr Lys Glu Gln Asn
 1330 1335 1340
 Gly Val Leu Met Asn Arg Asn His Ile Glu Asn Ile Lys Lys Thr Ile
 1345 1350 1355 1360
 Ser Asn Leu Leu Asn Ile Tyr Thr Ser Gln Glu Ser Val Lys Lys Lys
 1365 1370 1375
 Ala Asp Asp Val Ser Ser Lys Val Tyr Glu Leu Phe Glu Lys Leu Asp
 1380 1385 1390
 Cys Gly Ala Phe Asn Glu Gln Ile Asn Asp Ser Leu Leu Asn Leu Val
 1395 1400 1405
 Asn Cys Ile Asn Ala Asn Asp Phe Lys Thr Thr Asn Lys Ile Ile Val
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 Asp Leu Ser Arg Asn Leu Trp Asp Gly Ser Asn Lys Ala Trp
 1425 1430 1435

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 <212> PRT
 <213> Plasmodium falciparum

<400> 128
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 Leu Ser Val Phe Asp Lys Glu Lys Gly Asn Trp Phe Val Ile Asp Ala
 20 25 30
 Thr Asn Lys Ser Val Gly Ser Leu Ala Ala Cys Ile Ser Lys Leu Leu
 35 40 45
 Gln Gly Lys Tyr Arg Val Asp Tyr Asn Pro Asn Lys Val Asn Ser Ser
 50 55 60
 Ser Val Ile Val Val Asn Ala Ile His Val Lys Phe Tyr Gly His Thr
 65 70 75 80
 Trp Asp Thr Lys Ile Tyr Lys Phe Pro Arg Lys Ser His Ser Lys Ser
 85 90 95
 His Lys Ile Leu Ser Cys Lys Thr Val Phe Ala Arg Asn Pro Ser Met
 100 105 110
 Ile Leu Asn Leu Ala Val Lys Arg Met Leu Pro Asn Asn Arg Leu Arg
 115 120 125
 Gln Ile Phe Tyr Arg Lys Leu Tyr Val Tyr Pro Gly Ala Leu His Pro
 130 135 140
 His Trp Gly Ile Pro Gln Val Val Val Pro Lys Lys Asn Val Val Lys
 145 150 155 160
 Lys Glu Glu Gln Gln Asp Ile Lys Thr Phe Thr Ile Leu
 165 170

<210> 129
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 <212> PRT
 <213> Plasmodium falciparum

<400> 129
 Met Asp Ser Asn Ile Asn Ile Asn Tyr Asp Asn Tyr Gly Pro Gln Asn

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Ile Asp Glu Pro Gly Val Leu Ser Asn Met Asn Ser Val Ser Asn Ile	35	40	45
Ser Thr Ser Thr Asn Asn Ile Gly Thr Asn Thr Met Asn Phe Asn Asn	50	55	60
Ser Lys Gly Phe Ile Ile Asn Pro Phe Asn Glu Asn Tyr Lys Lys Asn	65	70	75
Asn Ile Cys Thr Tyr Leu Asp His Glu Ser Thr Asn Ile Asn Gly Gly	85	90	95
Val Asn Gln Tyr Asp Asn His Met Asp Gln Met Asn Gln Met Asn Gln	100	105	110
Thr Asn Gln Met Asn Gln Met Asn Gln Met Asn Gln Thr Asn Gln Met	115	120	125
Asn Gln Met Asn Gln Met Asn Gln Met Asn Gln Thr Asn Gln Met Asn	130	135	140
Gln Thr Asn Gln Met Asn Gln Thr Asn Gln Met Asn Gln Thr Asn Gln	145	150	155
Met Asn Gln Thr Asn Gln Met Asn Gln Met Asn Ile Gln His Gln Arg	165	170	175
Asn Ser Val Asn Ala Pro Asn Ile Tyr Ile Gln Asn Phe Asp Gln Asn	180	185	190
Cys Asp Ile Tyr Tyr Asn Asn Asn Gly Lys Ser Asn Gly Asn Leu Asn	195	200	205
Val Gln Gln Ser Asp Asn Ala His Asn Pro Leu Ile Tyr Asp Ile Ser	210	215	220
Glu Leu Tyr Asn Arg Glu Lys Asn Glu Glu Gln Lys Thr Ile Phe Arg	225	230	235
Asp Glu Tyr Ser Asn Arg Thr Ile Ile Lys Ala Leu Ile Asn Lys Ile	245	250	255
Thr Asn Thr Pro Met Ile Asn Asn Ser Val Lys Asn Ile Glu Asp Thr	260	265	270
Asn Ser Ser Tyr Asn Thr Asp Glu Asn Val Tyr Asn Val Cys Ser Met	275	280	285
Asp Glu Tyr Thr Thr Asn Lys Tyr Ile Ser Lys Asn Tyr Asn Glu Asn	290	295	300
Asp Gln Val Ile Val Gln Gly Asn Asn Thr Val Pro Glu Asn Asp Asn	305	310	315
Asn Glu Ile Tyr Lys Lys Glu Asn Leu Ser Ile Phe Gln Asp Ser Leu	325	330	335
Lys Asp Asn Ile Val Glu Tyr Asn Ala Tyr His Asp Ser Arg His His	340	345	350
Lys Pro Ile Asp Glu Gln Val Ala His Tyr Ile Asn Asn Tyr Tyr Thr	355	360	365
Asn Asn Asn Asn Asp Pro Tyr Asn Arg Asn Ser Thr Asn Asn Asn Gly	370	375	380

Ile	Ala	Glu	Asn	Asn	Ile	Asn	Val	Asn	Ser	Ala	Phe	Asn	Gln	Tyr	Lys
385					390					395					400
Glu	Asn	Lys	Gln	Tyr	Tyr	Asp	Leu	Leu	Asn	Thr	Phe	Thr	Gly	Asn	Ile
				405					410					415	
Met	Glu	Arg	Lys	Asn	Ile	Met	Met	Gln	Asn	Val	Asp	Tyr	Asn	Glu	Arg
			420					425					430		
Ile	Asn	Gly	Asn	Ser	Ile	Asn	Ile	Gln	Gly	Ser	Asn	Asn	Gln	Gln	Met
		435					440					445			
Asn	Asp	Gln	Leu	Val	Asp	Asn	Asn	Asn	Val	Asn	Met	Cys	Leu	Met	Gln
	450					455					460				
Gly	Pro	Tyr	Ile	Asn	Asn	His	Asn	Met	Lys	Asn	Phe	Tyr	Met	Gly	Ser
465				470						475					480
Asn	Tyr	Gly	Gly	Asn	Asn	Asn	Met	Val	His	Asn	Ile	Met	Gly	Thr	Asn
				485					490					495	
Asn	Met	Val	His	Asn	Asn	Met	Val	His	Asn	Asn	Met	Gly	Thr	Asn	Asn
			500					505					510		
Met	Gly	Thr	Asn	Asn	Met	Gly	Asn	Asn	Asn	Ile	Gly	Thr	Asn	Asn	Met
		515					520						525		
Gly	Asn	Asn	Asn	Met	Gly	Asn	Asn	Asn	Ile	Gly	Thr	Asn	Asn	Met	Val
	530					535					540				
His	Asn	Asn	Met	Gly	Asn	Asn	Asn	Ile	Gly	Thr	Asn	Asn	Met	Val	His
545					550					555					560
Asn	Asn	Met	Gly	Asn	Asn	Tyr	Met	Gly	Asn	Asn	Tyr	Met	Gly	Asn	Asn
				565					570					575	
Tyr	Met	Gly	Asn	Asn	Tyr	Met	Gly	Asn	Asn	Tyr	Met	Val	His	Asn	Asn
			580					585					590		
Met	Ser	Thr	Asn	Asn	Met	Gly	Asn	Asn	Tyr	Met	Gly	Asn	Asp	Asn	Met
		595					600					605			
Arg	Asn	Asn	Asn	Met	Gly	Thr	Asn	Asn	Met	Gly	Thr	Asn	Asn	Met	Gly
	610					615					620				
Thr	Asn	Asn	Met	Gly	Thr	Asn	Asn	Met	Gly	Thr	Asn	Asn	Met	Gly	Thr
625					630					635					640
Asn	Asn	Met	Gly	Thr	Asn	Asn	Met	Gly	Asn	Asn	Asn	Met	Gly	Asn	Asn
				645					650					655	
Tyr	Ile	Gly	Asn	Asp	Asn	Met	Arg	Asn	Asn	His	Ile	Ile	Asp	Tyr	Ile
			660					665					670		
Ile	Asn	Tyr	Met	Val	Asn	Asn	Met	Val	Asn	Asn	Met	Val	Asn	Thr	Met
		675					680					685			
Val	Asn	Asn	Met	Val	Asn	Asn	Met	Val	Asn	Tyr	Met	Val	Asn	Asn	Met
	690					695					700				
Val	Asn	Asn	Met	Val	Asn	Asn	Met	Gly	Asn	Asn	Met	Gly	Asn	His	Asn
705					710					715					720
Met	Ile	Asn	His	Met	Gly	Asn	Asp	Arg	Ile	Gly	Asn	Tyr	Asn	Met	Gly
				725					730					735	
Asn	Asn	Leu	Asn	Ser	Asn	Asn	Tyr	Met	Val	Asn	Asn	Tyr	Ser	Asn	Asn
			740					745					750		

Thr Tyr Gly Asn Asn Asn Asn Asp Val Asn Arg Asn Met Asn Tyr Asn
 755 760 765
 Tyr Ala Gly Tyr Asn His Met Tyr Ala Arg Cys Leu Asn Asn Asn Asn
 770 775 780
 Met Asn Asn Thr Pro Gln Tyr Ile Ile Pro Asp Asn Lys Asn Lys Ile
 785 790 795 800
 Ser Ala Val His Pro Phe Thr Lys Glu Thr Asn Thr Gly Ile Ile Leu
 805 810 815
 Asn Asn Ala Ser Gln Asp Tyr Thr Leu Ser Arg Ser Leu Gly Tyr Asn
 820 825 830
 Leu Asn Phe Ser Met Ile Gln Ser Glu Asn Asp Phe Asn Ser Thr Pro
 835 840 845
 Ser Asn Ile Glu Pro Val Asn Asn Gln Pro Leu Asn Val Glu Pro Ala
 850 855 860
 Ile Phe Glu Ala Val Asn Leu Glu Leu Phe Asp Ala Glu Ser Leu Asn
 865 870 875 880
 Asp Gln Tyr Val Cys Asp Glu Asn Ser Asn Thr Asp Val Ile Lys Ser
 885 890 895
 Lys Pro Leu Val Asp Asn Pro Leu Asp Asp Glu His Ile Tyr Ser Glu
 900 905 910
 His Leu Asn Asn Arg Ile Leu Asn Asp Glu Thr Leu Pro Ser Ala Gln
 915 920 925
 Leu Asn Val Glu Thr Leu Tyr Gly Glu His Glu Tyr Asn Glu Gln Arg
 930 935 940
 Met Asn Glu Gln Arg Ile Asn Glu Gln Arg Met Asn Glu Gln Arg Met
 945 950 955 960
 Asn Glu Gln Ser Ile Asn Glu Asp Tyr Thr Ser Glu Asp Tyr Thr Ser
 965 970 975
 Glu Glu Tyr Thr Asp Glu Asp Tyr Thr Asn Ile Lys Tyr Ile Tyr Ala
 980 985 990
 Glu Tyr Ile Asn Gly Gln Tyr Ile Asn Gly Gln Tyr Ile Asn Gly Gln
 995 1000 1005
 Tyr Ile Asn Gly Gln Tyr Ile Asn Glu Gln Tyr Thr Ser Glu Glu Tyr
 1010 1015 1020
 Thr Ser Glu Glu Tyr Thr Ser Glu Gly Tyr Thr Asn Glu Gly Tyr Thr
 1025 1030 1035 1040
 Asn Glu Gln Tyr Ile Asn Gly Gln Tyr Ile Asn Gly Gln Tyr Ile Asn
 1045 1050 1055
 Gly Gln Ser Ile Glu Asp Gln Ser Thr Asn Asp Gln Ser Ile Glu Asp
 1060 1065 1070
 Gln Ser Thr Asn Asp Gln Ser Ile Glu Asp Gln Ser Thr Asn Asp Gln
 1075 1080 1085
 Ser Ile Glu Asp Gln Ser Thr Asn Asp Gln Ser Ile Asn Glu Gln Ser
 1090 1095 1100
 Thr Asn Asp Gln Pro Pro Asn Glu Gln Pro Pro Asn Glu Gln Pro Pro
 1105 1110 1115 1120
 Asn Glu Glu Ser Thr Glu Asp Gln Cys Leu Ile Asp Lys Asn Val Arg

1125										1130										1135									
Asn	Glu	Gln	Leu	Ser	Asp	Ala	Thr	Leu	Asn	Arg	Tyr	Phe	Leu	Glu	Cys														
1140										1145										1150									
Ser	Gln	Arg	Asn	Thr	Glu	Ser	Leu	Cys	Asn	Glu	Ser	Leu	Ser	Asp	Pro														
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Tyr	Met	Asn	Asn	Asp	Asn	Ser	His	Ser	Gln	Tyr	Ser	Asn	Ser	Tyr	Glu														
1170										1175										1180									
Thr	Glu	Asn	Asp	Asn	Leu	Ser	Ser	Glu	Asn	Pro	Asn	Val	Asp	Asp	Leu														
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Ser	Gly	His	Ile	Gln	Asn	Asn	Asp	Asn	Ser	Phe	Asn	Ser	Ser	Ser	Ser														
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1220										1225										1230									
Leu	Pro	Leu	Ser	Ile	Glu	Gly	Thr	Asn	Ser	Ala	His	Leu	Asn	Phe	Gly														
1235										1240										1245									
Arg	Ser	Tyr	Ser	Asp	Pro	Phe	Pro	Phe	His	Ser	Pro	Asn	Thr	Ser	Ile														
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Leu	Glu	Phe	Cys	Cys	Ser	Arg	Tyr	Phe	Ser	Ser	Asn	Phe	Pro	Phe	Glu														
1265										1270										1275									
Lys	Thr	Met	Ile	Gln	Asn	Glu	Gln	Val	Gln	Glu	Ser	Leu	Tyr	Ile	Ser														
1285										1290										1295									
Asn	Asn	Phe	Ile	Lys	Ala	Asn	His	Val	Glu	Arg	Ile	Lys	Ile	Thr	His														
1300										1305										1310									
Ile	Asp	Thr	Phe	Thr	Ser	Asn	Asn	Leu	Leu	Val	Lys	Asn	Glu	Ile	Thr														
1315										1320										1325									
Asp	Lys	Glu	Ile	Ser	Glu	Asn	Lys	Asn	Glu	Lys	Ile	Ile	Glu	Asn	Glu														
1330										1335										1340									
Lys	Ile	Ile	Glu	Asn	Glu	Lys	Val	Val	Lys	Asn	Glu	Asn	Met	Val	Lys														
1345										1350										1355									
Asn	Glu	Lys	Val	Val	Lys	Asn	Lys	Asn	Val	Val	Lys	Asn	Glu	Asn	Val														
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Val	Glu	Lys	Asn	Ser	Arg	Phe	Ile	Lys	Lys	Glu	His	Asn	Ile	Ser	Met														
1380										1385										1390									
Leu	Asn	Val	Pro	Asn	Tyr	Tyr	Glu	Asn	Asn	Thr	Arg	Gly	Lys	Asp	Ile														
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Ile	Glu	Glu	Glu	Lys	Glu	Ile	Lys	Lys	Phe	Val	Asn	Lys	Lys	Lys	Asn														
1445										1450										1455									
Ser	Leu	Asn	His	Ile	Asn	Arg	Asn	Glu	Lys	Ile	Tyr	Ile	Gly	Asp	Asn														
1460										1465										1470									
Lys	Lys	Asn	Tyr	Ile	Ile	Glu	Asn	Ile	Cys	Lys	Cys	Phe	His	Phe	His														
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Ser	Leu	Gly	Leu	Asn	Gly	Gly	Leu	Pro	Glu	Ile	Asn	Val	Asn	Lys	Asp														
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Lys Asn Leu Tyr Asn Asn Leu His Ile Thr Asn Cys Leu Leu Phe Lys
 1505 1510 1515 1520
 Lys Glu Thr Thr Glu Glu Val Leu Lys Lys Phe Leu Pro Asn Asn Glu
 1525 1530 1535
 Ile Asn Ile Met Ser Tyr Tyr Tyr Asn His Ile Leu Tyr Arg Leu Arg
 1540 1545 1550
 Met Lys Asn Lys Tyr Glu Asp Ile Ile His Asp Lys Leu His Val Tyr
 1555 1560 1565
 His Lys Leu Lys Glu Leu Ile Lys Tyr Gln Tyr Lys Glu Tyr Leu Leu
 1570 1575 1580
 His Lys Thr Val Tyr Pro Arg Asn Ile Cys Arg Asn Glu His Met Asn
 1585 1590 1595 1600
 Gln Lys Asp Asn Cys Thr Lys Asp Ile Tyr Ile Asn Glu Asp Asn Asn
 1605 1610 1615
 Lys Thr Glu Leu Asn Ile Glu Lys Ile Ser Lys Glu Asn Asn Glu Glu
 1620 1625 1630
 Asn Lys Asn Thr Tyr Met Asn Thr Thr Ser Tyr Lys Glu Leu Leu Gly
 1635 1640 1645
 Asn Tyr Ile Asn Phe Leu Asp Thr Phe Asn Leu Tyr Asp Asn Ile Tyr
 1650 1655 1660
 Ser Lys Glu Lys Tyr Glu Thr Asp Glu Asn Asp Leu Ile Leu Asn Asn
 1665 1670 1675 1680
 Lys Glu Pro Ser Ile Ser Tyr Asn Phe Asn Ser Asn Tyr Asn Asn Asp
 1685 1690 1695
 Leu Leu Lys Ser Asp Asn Val Tyr Glu Tyr Ile Tyr Lys Asp Ile Tyr
 1700 1705 1710
 Tyr Asp Ser Tyr Tyr Asp Lys Asn Thr Tyr Ile Tyr Tyr Asp Asn Lys
 1715 1720 1725
 Tyr Thr Phe His Lys Thr Asn Ser Phe Ile Asn Asp Glu Asn Gly Cys
 1730 1735 1740
 Tyr His Leu Leu Thr Tyr Pro Leu Glu Asp Glu Ile Glu Asn Met Asn
 1745 1750 1755 1760
 Tyr Tyr Glu Lys Lys Lys Gly His Lys Arg Lys Ile Ala His Asn Lys
 1765 1770 1775
 Asp Met Asn Val Asn Leu Lys Arg Lys Lys Ile Lys Tyr Glu Asn Glu
 1780 1785 1790
 Asn Ile Ile Ser Asp Lys Leu Asn Val Met Asn Thr Glu Tyr Asn Tyr
 1795 1800 1805
 Ile His Lys His Asp Glu Lys Glu Lys Gly Ser Cys Ile Leu Asn Lys
 1810 1815 1820
 Asp Asn Lys Asn His Asn Lys Leu Leu Leu Lys Asp Lys Lys Ile Tyr
 1825 1830 1835 1840
 Asn Val Lys Lys Lys Trp Glu Arg Met Leu Pro Ile Ser Lys Arg Lys
 1845 1850 1855
 Lys Leu Ser Thr Gln Ile Arg Ile Asn Lys Ile Lys Lys Asn Met Gln
 1860 1865 1870

Lys Ser Cys Lys Ile Leu Asn Ile Lys Tyr Lys Asp Val Ile Tyr Ser
 1875 1880 1885
 Glu Phe Phe Arg Leu Ser Ser Lys Arg Lys Lys Asn Cys Asn Glu Leu
 1890 1895 1900
 Leu Asn Gly Glu Lys His Val Glu Lys Asn Lys Thr Asn Ala Leu Leu
 1905 1910 1915 1920
 Asn Gly Gly His Thr Phe Val Glu Asp Gln Lys Lys Gly Lys Glu Tyr
 1925 1930 1935
 Lys Lys Glu Glu Arg Glu His Ile Val Gln Gly Glu Ile Lys Glu Lys
 1940 1945 1950
 Glu Lys Tyr Thr Leu Gly Gly Arg Glu Arg Gly Ser Arg Arg Ser Lys
 1955 1960 1965
 Glu Ser Asp Ser Phe Arg Gly Arg Glu Arg Gly Ser Arg Arg Ser Lys
 1970 1975 1980
 Glu Val Asp Thr Leu Lys Gly Arg Glu Arg Asp Ser Leu Lys Gly Lys
 1985 1990 1995 2000
 Glu Arg Asp Ser Leu Lys Gly Arg Glu Arg Asp Ser Leu Lys Gly Lys
 2005 2010 2015
 Glu Arg Asp Ser Phe Arg Gly Lys Glu Arg Asp Ser Phe Arg Gly Lys
 2020 2025 2030
 Glu Arg Glu Thr Leu Lys Gly Arg Glu Arg Asp Ser Leu Lys Gly Arg
 2035 2040 2045
 Glu Arg Asp Ser Leu Lys Gly Arg Glu Arg Gly Ser Phe Arg Gly Lys
 2050 2055 2060
 Glu Arg Asp Ser Phe Arg Gly Lys Glu Arg Asp Ser Phe Arg Gly Lys
 2065 2070 2075 2080
 Glu Arg Asp Ser Phe Arg Gly Arg Lys Arg Asp Thr Phe Arg Ser Arg
 2085 2090 2095
 Asp Arg Gly Ser Phe Arg Asn Lys Thr Gly Asp Val Tyr Lys Ser Arg
 2100 2105 2110
 Asp Ile Asn Leu Tyr Lys Glu Glu Asn Asn Lys Lys Lys Asp His Tyr
 2115 2120 2125
 Tyr Val Asp Lys Tyr His Tyr Ile Asn Lys Tyr Tyr Pro Glu Lys Tyr
 2130 2135 2140
 Ser Arg Lys Phe Asn Tyr Asn His Ser Ser Gly Ser Tyr His Asn Ala
 2145 2150 2155 2160
 Gln Lys Tyr Asp Ser Leu Arg Tyr Glu Gln Lys Glu Lys Pro Tyr Lys
 2165 2170 2175
 Ile Thr Glu Asn Asn Lys Lys Asn Glu Gly Asn Glu Ile Leu Lys Lys
 2180 2185 2190
 Tyr Ser Ile Glu Asn Glu Glu Lys Asn Asn Tyr Asp Lys Glu Gln Asn
 2195 2200 2205
 Glu Asn Cys Ile Leu Asp Lys Asp Thr Gln Cys Asn Val Asn Thr Lys
 2210 2215 2220
 Glu Lys Asn Asn Leu Asp Asn Lys Lys Ser Phe Pro Ser Asn Ile Lys
 2225 2230 2235 2240
 Val Lys Leu Glu Glu Glu Glu Lys Ser Asp Asp Lys Arg Asp Asp Lys

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<211> 558
<212> PRT
<213> Plasmodium falciparum
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Ala Asp Leu Asn Glu Lys His Glu Tyr Val Glu Ser Pro Phe Phe
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Lys Arg Glu Glu Asn Glu Asn Ser Tyr Glu Glu Glu Glu Leu Gln Glu
  35 40 45
Met Leu Arg His Phe Asn Pro Leu Asp Phe Gly Ile Lys Glu Lys Leu
  50 55 60
Ser Glu Ser Glu Lys Lys Ile Leu Val Lys Glu Ile Met Gly Arg Ser

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65					70					75					80				
Lys	Lys	Cys	Thr	Met	Lys	Asn	Asn	Asp	Met	Leu	Asn	Glu	Glu	Asn	Lys				
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Ser	Cys	Glu	Lys	Thr	Lys	Glu	Arg	Lys	Lys	Gln	Asp	Ile	Phe	Ile	His				
			100					105					110						
Asp	Asn	Ile	Ile	His	Met	Asn	Asp	Asn	Ile	Lys	Lys	Glu	Ile	Lys	Glu				
		115					120					125							
Glu	Asp	Gln	Asn	Gly	Ser	Asn	Ser	Lys	Glu	Asn	Asp	Lys	Lys	Lys	Lys				
	130					135					140								
Lys	Asn	Lys	Lys	Lys	Lys	Ile	Asn	Asn	Asn	Asp	Lys	Lys	Asn	Glu	Leu				
	145					150					155				160				
Ser	Tyr	Leu	Asp	Gly	Asp	Cys	Tyr	Phe	Pro	Asn	Asp	Gly	Tyr	Asp	Tyr				
				165					170					175					
Glu	Gln	His	Leu	Lys	Pro	Ile	Ser	Lys	Asn	Phe	Ile	Glu	Ile	Lys	Asn				
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Lys	Ser	Glu	Gln	Asn	Phe	Phe	Glu	Ile	Gln	Pro	Asn	Asn	Glu	Glu	Glu				
		195					200					205							
Lys	Glu	Leu	Phe	Lys	Thr	Phe	Asp	Met	Asp	Asn	Tyr	Glu	Glu	Leu	Asn				
	210					215					220								
Asp	Asn	Phe	Val	Cys	Glu	Ala	Gln	Asn	Val	Glu	Glu	Val	Gly	Glu	Leu				
	225					230					235				240				
Lys	Val	Asp	Lys	Lys	Leu	Ile	Trp	Gly	Asn	Val	Gln	Pro	Phe	Leu	Tyr				
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Ile	Pro	Ser	Asn	Asp	Tyr	Met	Asp	Asp	Ala	Glu	Asp	Met	Val	Asn	Met				
			260					265					270						
Asp	Asn	Ile	Asn	Asp	Asn	Ile	Asn	Asp	Asn	Ile	Asn	Asp	Asn	Ile	Asn				
		275					280					285							
Asp	Lys	Ile	Asn	His	Lys	Ile	Tyr	Asp	Lys	Ile	Tyr	Asp	Lys	Ile	Asn				
	290					295					300								
Ser	Asp	Asp	Ile	Phe	Ser	Thr	Asp	Ser	Asp	Thr	Asp	Asn	His	Ile	Asn				
	305					310					315				320				
Lys	Asn	Tyr	Asn	Lys	His	Asn	Asn	Ile	Asn	Glu	Asp	Gln	Ile	Ile	Phe				
				325					330					335					
Asp	Asp	Lys	Leu	Asn	Asp	Ile	Gly	Leu	His	Asn	Asn	Gln	Asp	Ile	Ser				
			340					345					350						
Thr	Lys	Asn	Tyr	Asp	Glu	Lys	Gly	Thr	Tyr	Glu	Asn	Asn	Met	Asp	Ser				
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Ile	Lys	Phe	Ser	Asp	Leu	Val	Glu	Tyr	Gln	Trp	Arg	Asn	Asn	Leu	Asn				
	370					375					380								
Pro	Val	Asn	Asp	Ile	Lys	Lys	Ile	Ile	Lys	Lys	Lys	Lys	Lys	Gly	Lys				
	385					390					395				400				
Asn	Val	Lys	Leu	Lys	Leu	Asp	Asp	Ile	Ile	Val	Asn	Ile	Asn	Asp	Glu				
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Asp	Lys	Lys	Lys	Ile	Met	Gln	Ile	Val	Asn	Leu	Gln	Asn	Glu	Glu	Ile				
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Arg	Asn	Gln	Thr	Arg	Tyr	Ser	Ser	Lys	Gly	Asn	Asp	Lys	Asn	Val	Glu				
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Asn Val Asn Val Asn Ala Asn Glu Asn Glu Asn Glu Glu Glu Gln Gln
 450 455 460
 Lys Tyr Glu Gly Gly Gly His Tyr Tyr Asp Asp Glu Asp Ser Tyr Ser
 465 470 475 480
 Glu Asn Leu Glu His Ser Ser Ser Ser Leu Ser Tyr Asp Cys Glu Thr
 485 490 495
 Ile Leu Thr Thr Lys Thr Asn Thr Thr Asn His Pro Tyr Lys Leu Ile
 500 505 510
 Ile Pro Lys Gln Ile Lys Pro Thr Pro Leu Leu Leu Asn Ser Gln Lys
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 <212> PRT
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 Thr Leu Asp Glu Lys Ile Asn Ser Ile Lys Glu Asn Glu Glu Ala Tyr
 35 40 45
 Asn Phe Glu Asp Thr Ile Ile Arg Arg Ile Asn Lys Met Asn Asn Thr
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 Ala Leu Val Phe Thr Cys Glu Asn Ile Asn Lys Lys Lys Ile Asn Asn
 65 70 75 80
 Pro Tyr Ile Trp Glu Leu Ile Tyr Asn Arg Ile Asn Glu Ile Tyr His
 85 90 95
 Ser Phe Ser Leu Thr Glu Ile Ile Val Leu Phe His Ala Tyr Cys Asn
 100 105 110
 Ser Ile Ser Phe Asp Ile Lys Ser Met Asn Ser Leu Ile Asn Phe Leu
 115 120 125
 Trp Asn Ile Leu Glu Asn Lys Ile Asn Asp Val Glu Asp Leu Ser Ser
 130 135 140
 Leu Leu Ala Leu Tyr Val Cys Ala Glu Lys Thr Lys Asn Leu Thr Lys
 145 150 155 160
 Arg Glu His Ile Ser Asn Leu Ile Leu Gln Arg Tyr Ile Thr Leu Ile
 165 170 175
 Glu Gln Asp Lys Ile Phe His Ile Asn Glu Ile Arg Leu Ser Ile Phe
 180 185 190
 Leu Lys Ile Leu Cys Ser His Asn Lys Asn Ile Ile Gln Val Asp Lys
 195 200 205
 Lys Tyr Ile Met Gln Phe Ser Asn Asp Ile Ser Lys Ile Ile Ile Arg
 210 215 220

Asn Ile Asn Thr Leu Met Leu Cys Leu His Phe Phe Ile Lys Tyr Gln
 225 230 235 240
 Ile Tyr Asp Glu Pro Phe Ile Ile Leu Leu Lys Gln Ile Gln Asn Leu
 245 250 255
 Leu Ile Phe Lys Lys Glu Ile Asn Val Asn Val Ile Leu Lys Tyr Phe
 260 265 270
 Ser Phe Ile Ser Asn Leu Arg Asn Pro Tyr Ala Leu Gln Glu Ile Lys
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 Gln Met
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 Lys Glu Asn Asn Ile Lys Tyr Ile Thr Arg Asn Val Asn Tyr Asp Arg
 50 55 60
 Leu Ser Val Asp Glu Lys Lys Lys Lys Asn Asp Ile Asn Asn Ile Asp
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 Lys Tyr Glu Lys Thr Lys Thr Cys Ser Tyr Val Leu Asn Asn Leu His
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 Lys Lys Tyr Asn His His Asn Asn Lys Met Tyr Asp Glu Tyr Lys Phe
 100 105 110
 Tyr Asp Tyr Tyr Glu Leu Ile Asn Lys Ile Lys Lys Leu Lys Gly Phe
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 Lys Asn Val Ile Glu Glu Arg Gly Lys Gly Asn Asp Asn Arg Leu Gly
 130 135 140
 Val Ser Ser Thr Ser Asn Asp Lys Lys Lys Asn Asn Lys Lys Arg Tyr
 145 150 155 160
 Asn Asn Asn Asn Asn Asn Asp Asn Asn Asn Asp Ile Asn Asn Asp Cys
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 Asn Asn Asn Lys Tyr Asn Pro Cys Cys Ser Ser Cys Asn Gly Asn Val
 180 185 190
 Leu Ser Ser Ser Lys Thr Phe Asn Met Cys Glu Gly Asp Lys Lys Ile
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 Ser Tyr Gly Arg Gln Ile Thr Asn Leu Val Ser Cys Tyr Lys Tyr Asn
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 Asn Gln Leu Lys Ser Pro Tyr Asn Ile His Thr Ile Asn Gln Gln Val
 225 230 235 240

His Asp Asn Asn Ile Tyr Val Asp Asn Gln His Met Leu Tyr His Asn
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 Tyr Thr Asp Asn Leu Lys Tyr Ser Asn Tyr Asn Lys Met Asn Asp Leu
 260 265 270
 Ser Tyr Asn Leu His Glu Lys Lys Asn Ser Phe Ser Asn Phe Ile Asn
 275 280 285
 Ser Gly Pro Arg Asp Asn Pro Met Glu Leu Cys Lys Lys Leu Lys Lys
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 Ala Val Glu Tyr Lys Glu Arg Val Ile Asp Ile Asn Lys Glu Lys Asp
 305 310 315 320
 Phe Val Leu Leu Gly Ile Ser Lys Thr Cys Val Lys Lys Cys Asn Thr
 325 330 335
 Cys Ser Gly Asp Asn Val Thr Lys Asp Ile Asp Lys Cys Val Glu Asp
 340 345 350
 Glu Glu Lys Ser Lys Glu Gly Val Ile Leu Asn Tyr Met Lys Lys Asp
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 Ile Leu Phe Tyr Asn Thr Phe Asn Arg Asn Asn Asn Asp Pro Asn Arg
 370 375 380
 Lys Glu Lys Pro Lys Glu Cys Asp Lys Tyr Asn Lys Asp Asp Val His
 385 390 395 400
 Val Leu Cys Asp His Asp His Phe Ser His Ser Lys Ser Ser His Thr
 405 410 415
 Thr Lys Asn Ser Asn Thr Lys Leu Tyr Asn Val Lys Glu Lys His Ile
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 His Ile Asn Lys Val Tyr Asn Asn Val Tyr Phe Val Glu Gly Gln Glu
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 Lys Leu Tyr Ser Pro Ser Ile Lys Glu Glu Thr Gln Phe Tyr Ile Gln
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 Asn Asp Tyr Lys His Asp Asp Asn Val Lys Met Leu Ser Tyr Asn Tyr
 465 470 475 480
 Tyr Asn Asp Met Val Tyr Lys Asn Ser Lys Gly Met Ile Asp Ser Leu
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 Ser Thr Gln His Ala Phe Lys Gly Glu Glu Thr Val Ile Asn Ile Asn
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 Lys Leu Arg Arg Arg Phe Ser Ile Met Asn Arg Lys Val Tyr Ser Asp
 515 520 525
 Ser Val Leu Tyr Phe Tyr Gly Ala Pro Trp Trp Leu Asn Lys Ile Arg
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 Arg Gly Gln Lys Ile Gly Gln Glu Lys Lys His Lys Lys Lys Asp Glu
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 Asn Lys Lys Lys Asn Lys Lys Asn Lys Asn Lys Asn Asn Asn Ser
 565 570 575
 Asn Asn Ile Asn Asn Lys His Gly Arg Val Ile Gln Tyr Thr Asp Glu
 580 585 590
 Lys Ile Gln Asn Asp Tyr Cys Lys Asn Lys Glu Ser Ser Lys Arg Gly
 595 600 605

Asn His Lys Met Met Arg Lys Glu Lys Asn Leu Asn Ser Ser Leu ^{Leu}
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 Ser Ile Asn Gly Lys Cys Tyr Asn Lys Trp Lys Lys Asn Tyr Asn Lys
 625 630 640
 Thr Arg Lys Pro Lys Asn Glu Gly Arg Lys Gly Glu Lys Tyr Ile Tyr
 645 650 655
 Cys Tyr Glu Asn Ile Lys Ile Leu Glu Asp Ile Lys Asp Arg Phe Phe
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 Asn Asp His Lys Arg Asn Asn Ile Leu Asn Glu Glu Asn Phe Ile Lys
 675 680 685
 Glu His Gln Ile Asn Gly Arg Asn Lys Glu His Val Asn Glu Lys Asn
 690 695 700
 Lys Glu Glu Asp Thr Phe Asn Ile Ser Lys Glu Asn Thr Lys Glu Gly
 705 710 715 720
 Ser Tyr Ile Ile Thr His Lys Asn Lys Arg Asn Met Asp Asn Ile Lys
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 Ile Gly Arg Tyr Asp Asn Ile Asn Asp Lys Lys Glu Phe Ser Ser Asn
 740 745 750
 Ile Leu Tyr Lys Cys Val Lys Lys Asn Asp Lys Ile Asn Lys Ser Gln
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 Thr Ser Leu Phe Phe Glu Phe Met Lys Gly Lys Gly Asp Gln Lys His
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 Asn Val Ile Lys Lys Glu Asp Val Phe Ile Lys Thr Phe Arg Thr Asn
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 Lys Ser Pro Thr Glu Leu Thr Lys Lys Ile Ser Asp Tyr Lys Cys Asn
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 Leu Leu Tyr Thr Ser Leu Asp Arg Ile His Lys Asn Val Ser Ile Tyr
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 Asn Glu Arg Ile Glu Arg Thr Lys His Val Pro Gln Lys Lys Asn Asp
 835 840 845
 Asn Ile Asp Ile Arg Gly Ile Tyr Lys Ser Tyr Asn Phe Phe Lys Ser
 850 855 860
 Met Asn Met Met Asn Ser Leu Ser Lys Cys Tyr His Thr Lys Thr Cys
 865 870 875 880
 Asp Tyr Ser Asn Tyr Asp Phe Met Lys Asn Lys Met Ser Lys Lys Ala
 885 890 895
 Gln Asn Lys Leu Val Ser Lys Cys Ile Ser Lys Tyr Lys Lys Lys Ala
 900 905 910
 Ile Lys Lys Lys Glu Arg Lys Glu Thr Thr Thr Thr Lys Lys Lys Tyr
 915 920 925
 Ile Tyr Arg Lys Asn Glu Ile Ser Ile Ser Phe Asp Gly Asn Val Phe
 930 935 940
 Gly His Glu Asn Arg Lys Arg Thr Lys Glu Asn Asn Lys Ser Lys Glu
 945 950 955 960
 Ser Ala Tyr Thr Ser Lys Ser Arg Lys Asn Asn Lys Ile Lys Gly Glu
 965 970 975
 Glu Lys Lys Thr Lys Arg Ser Leu Cys Ser Tyr Lys Leu Arg Lys Met

287

Lys Arg Phe Asn Tyr Glu Lys Tyr Gly Ser Phe Leu Phe Asn Asn His
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 Glu Glu Ile Ser Phe Ser Thr Ser Cys Ser Asn Leu His Lys Lys Asp
 1380 1385 1390
 Leu Gln Leu Arg Gly Met Asp Thr Ile Gly Lys Lys Ile Met Gly Gly
 1395 1400 1405
 Lys Lys Phe Ile Arg Asn Leu Tyr Asn Glu Lys His Lys Asn Leu Asn
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 Ile Phe Gln Lys Asn Cys Ser His Ile Leu Leu Lys Lys Asn Thr Lys
 1425 1430 1435 1440
 Lys Asn Ile Leu Ser Asn Asp Ile Gln Leu Lys Ser Pro Lys Cys Tyr
 1445 1450 1455
 Ile Lys Tyr Asn Asn Asn Met Asp Thr Leu Phe Asn Tyr Glu Asp Asp
 1460 1465 1470
 Ser Asn Trp Ser Tyr Asn Ser Ser Ile Cys Tyr Asp Ile Ile Gln Val
 1475 1480 1485
 Ser Asp Glu Glu Glu Tyr Asp Asn Val Asn Ile Lys Asp Lys Leu Tyr
 1490 1495 1500
 Glu Tyr Asn Met Cys Thr Asp Ser Ser Arg Tyr Glu Arg Ile Val Asn
 1505 1510 1515 1520
 Tyr Glu Asn Ser Ile His Ser His Asn Pro Tyr Gly Thr Asn Ser Lys
 1525 1530 1535
 Tyr Glu Thr Phe Cys Asp Asp Ala Phe Pro Ser Gln Ile Cys Ser Ile
 1540 1545 1550
 His Asn Tyr Asn Lys Lys Gly Gly Arg Tyr Asn Phe Ser Lys Leu Tyr
 1555 1560 1565
 Lys Asn Lys Lys Asn Met Lys Ser Asn Met Asn Pro Ser Phe Ser Asp
 1570 1575 1580
 Leu Cys Ile Ile Asp Met Asp Met Ile Glu Ile Val Ser Lys Thr Lys
 1585 1590 1595 1600
 Phe Pro Gly Ile Asn Lys Ser Lys Ile Ile Cys Gly Thr Pro Pro Tyr
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 Met Pro Pro Glu Ser Phe Asp Gly Ile Val Ser Pro Gly Asn Asp Ile
 1620 1625 1630
 Trp Ala Cys Gly Val Ile Leu Tyr Val Leu Met Asp Gly Arg Phe Pro
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 Tyr Glu Ile Asn Asn Tyr Met Pro Ile His Leu Lys Lys Lys Ile Leu
 1650 1655 1660
 Met Glu Asn Lys Pro Lys Phe Glu Pro Phe Ile Trp Lys Gln His Thr
 1665 1670 1675 1680
 Asp Leu Leu Asp Leu Cys Leu Arg Leu Leu Asp Pro Asn Pro Trp Thr
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 Lys Phe Asn Asp Asn Leu Ser Gln Leu Gln Ile Pro Gln Glu Leu Lys
 35 40 45
 Lys Asn Ile Ile Thr Asn Asn Leu His Asp Glu Lys Val Ile Leu Thr
 50 55 60
 Asp Asn Asn Met Lys Glu Lys Cys Asn His Ile Asp Arg Asp Thr Ile
 65 70 75 80
 Thr Lys Glu Ile Ser Ile Glu Arg Leu Leu His Lys Ile Arg Asn Leu
 85 90 95
 Glu Asn Glu Lys Lys Phe Leu Leu Arg Phe Leu Glu Asn Lys Lys Asn
 100 105 110
 Ile Glu Leu Glu Tyr Lys Lys Ala Leu Glu Thr Gln Ala Ala Tyr Val
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 Met Lys Ser Leu Glu Tyr Ser Leu Met
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 Asn Lys Lys Arg Glu Glu Glu Lys Arg Arg Arg Arg Arg Arg Ile Arg
 35 40 45
 Ala Arg Glu Tyr Asn Asn Ala Lys Tyr Asn Lys Asn Arg Tyr Lys Met
 50 55 60
 Asn Lys Tyr Asn Arg Asn Lys Asn Ile Asn Asp Ile Tyr Lys Asp Asp
 65 70 75 80
 Ile Tyr Tyr Ser Glu Asn Ile Phe Lys Asn Asp Glu Ile Asn Tyr Ile
 85 90 95
 Asn Thr Ile Asn Glu Asn Glu Glu Phe Ile Leu Lys Lys Phe Lys Ile
 100 105 110
 Leu Asn Phe Ile Ser Arg Phe Gln Phe Val Asp Val Phe Ile Ser Leu
 115 120 125
 Phe Ile Val Ser Ser Leu Asn Leu Tyr Leu Leu Glu Ala Arg Met Leu
 130 135 140

Asn 145	Gly	Ala	Tyr	Tyr	Phe 150	Leu	Asn	Tyr	Cys	Met 155	Leu	Ser	Thr	Ile	Ser 160
Ser	Phe	Leu	Leu	Phe 165	Ser	Phe	Thr	Ser	Leu	Lys 170	Ile	His	Ile	Phe	Lys 175
Asn	Gly	Asn	Ile 180	Lys	Ile	Ser	Ala	Cys 185	Leu	Asn	Glu	Ser	Asn 190	Leu	Glu
Val	Thr	Thr 195	Ser	Gly	Pro	Leu	Ser 200	Thr	Lys	Asp	Leu	Val 205	Glu	Glu	Glu
Gly	His 210	Ala	Gln	Ile	Asn	Asn 215	Leu	Ile	Ile	Asn	Asp 220	Lys	Asn	Met	Thr
Ser 225	Gly	Val	Val	Asn	Asp 230	Phe	Ser	Gly	Asn	Gly 235	Asn	Asn	Val	Glu	Leu 240
Thr	Asp	Asp	Leu	Lys 245	Ser	Gly	Glu	Pro	Gln 250	Asn	Arg	Asp	Asp	Ile 255	Gln
Thr	Glu	Glu	Thr 260	Lys	Lys	Glu	Lys	Met 265	Asn	Thr	Arg	Thr	His 270	Asn	Asp
Glu	Asp	Asn	Thr 275	Lys	Lys	Lys	Asn 280	Ile	Lys	Asp	Lys	Lys 285	Lys	Ala	Asn
Gly	Asp 290	Asp	Lys	Val	Ile	Gln 295	Lys	Cys	Ile	Asp	Asn 300	Glu	Arg	Lys	Lys
Lys 305	Gln	Asn	Gly	Met	Ile 310	Gln	Ser	Val	Asn	Asp 315	Gly	Asp	Lys	Asn	Ser 320
Asn	Phe	Asn	Asn	Asn 325	Asn	Asn	Asn	Asn	Ile 330	Asn	Gly	Asp	Ser	Asn 335	Asn
Asn	Asn	Ile	Asn 340	Gly	Asp	Ser	Asn	Asn 345	Asn	Asn	Ile	Asn	Gly 350	Asp	Ser
Asn	Asn	Asn	Asn 355	Ile	Asn	Gly	Asp 360	Ser	Asn	Asn	Asn 365	Asn	Ile	Asn	Gly
Asp 370	Ser	Asn	Asn	Asn	Asn 375	Ile	Asn	Gly	Asp	Ser	Asn 380	Asn	Asn	Asn	Tyr
His 385	Asn	Asn	Tyr	His	Asn 390	Asn	Tyr	Arg	Asn	Asn 395	Tyr	His	Asn	Asn	Tyr 400
Arg	Asn	Asn	Asn	Cys 405	Arg	Asn	Asn	Ile	Leu 410	Glu	Gln	Asn	Lys	Cys 415	Asp
Lys	Asn	Val	Leu 420	Cys	Tyr	Asn	Asn	Ile 425	Tyr	Asn	Thr	Met	Lys 430	Asp	Asn
Asp	Thr	Tyr	Ile 435	Tyr	Leu	Lys	Lys 440	Asn	Lys	Phe	Asn	Ser 445	Leu	Leu	Lys
Ser 450	Asn	Cys	Ile	Lys	Thr	Asn 455	Phe	Asn	Met	Ile	Lys 460	Ile	Gly	Tyr	Val
Ile 465	Phe	Leu	Phe	Val	Leu 470	Leu	Cys	Leu	Cys	Ile 475	Tyr	Leu	Ile	Thr	Gly 480
Val	Glu	Cys	Ser	Leu 485	Phe	Gly	Ile	Tyr 490	Ile	Tyr	Leu	Ser	Tyr	Phe 495	Asn
Phe	Asn	Ile	Glu	Gly	Ile	Leu	Ile	Asp 505	Tyr	Met	Asp	Met	Leu 510	Asn	Ile

Leu	Lys	Leu	Lys	Ile	Lys	Lys	Gly	Tyr	Ile	Tyr	Pro	Phe	Phe	Val	Met
		515					520					525			
Leu	Pro	Phe	Ile	Phe	Pro	Val	Ile	Ile	Ser	Met	Cys	Phe	Phe	Leu	Ser
	530					535					540				
Val	Phe	Phe	Leu	Asn	Met	Tyr	Tyr	Glu	Ser	Phe	Ser	Lys	Leu	Tyr	Lys
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Lys	Ile	Ser	Glu	Leu	Lys	Asn	Glu	Phe	Ile	Asn	Ser	Ser	Glu	Asn	Asp
				565					570					575	
Asn	Val	Asn	Glu	Arg	Ile	Leu	Val	Ser	Glu	Thr	Ser	Asn	His	Leu	Cys
			580					585					590		
Leu	Asn	Glu	Ser	Asn	Asp	Lys	Val	Ser	Asn	Thr	Ser	Asp	Asp	Phe	Leu
		595					600					605			
Ser	Arg	Asn	Asn	Ser	Asn	Ile	Ser	Ser	Ser	Lys	Ser	Glu	Met	Ile	Asn
	610					615					620				
Ser	Asn	Phe	Val	Phe	Asn	Lys	Leu	Leu	Asn	Phe	Tyr	Phe	Ser	Phe	Ala
625					630					635					640
Val	Phe	Phe	Ser	Tyr	Leu	Gly	Ser	Ala	Phe	Leu	His	Ile	Ser	Leu	Gly
				645					650					655	
Glu	Ile	Ile	Cys	Ile	Ala	Leu	Leu	Thr	Phe	Tyr	Gln	Ile	Val	Lys	His
			660					665					670		
Thr	Asn	Asn	Leu	Asn	Ile	Thr	Ile	Leu	Leu	Lys	Ser	Glu	Lys	Ile	Lys
		675					680					685			
Phe	Cys	Lys	Phe	Leu	Leu	Phe	Ile	Leu	Tyr	Gly	Leu	Leu	Cys	Phe	Ser
	690					695					700				
Ile	Asn	Leu	Tyr	Val	Asn	Gln	Trp	Glu	Glu	Tyr	Ile	Thr	Lys	Leu	Lys
705					710					715					720
Arg	Leu	Lys	Arg	Arg	Ile	Leu	Leu	Phe	Glu	Lys	Asn	Lys	Phe	Ser	Glu
				725					730					735	
Ile	Val	Asp	Leu	Asn	Thr	Gln	Lys	Gly	Asp	Gly	Asp	His	Phe	Asp	Glu
			740					745					750		
Thr	Gln	Ile	Phe	Ser	Ile	Phe	Phe	Ser	Phe	Leu	Ile	Lys	Lys	Asn	Glu
		755					760					765			
Gly	Ser	Lys	Met	Arg	Asp	Asn	Asp	Met	Asn	Ser	Asp	Ser	Glu	Asp	Ser
	770					775					780				
Ile	Tyr	Asp	Ala	Tyr	Glu	Gln	Gln	Ile	Gln	Leu	His	His	Gly	Asp	Asn
785					790					795					800
Met	Val	Asn	Gly	Met	Leu	Met	Met	Arg	Arg	Ile	Ser	Met	Gln	Asn	Leu
				805					810					815	
Glu	Asp	Asp	Glu	Thr	Gln	Val	Glu	Tyr	Ile	Asn	Arg	Glu	Ile	His	Thr
			820					825					830		
Gln	Gly	Asp	Leu	His	Val	Arg	Arg	Thr	Asn	Gln	Gly	Ile	Leu	Arg	Phe
		835					840					845			
Asn	Met	Arg	Arg	Gly	Lys	Lys	Gly	Ser	Asn	Glu	Asn	Met	Gly	Val	His
	850					855					860				
His	Glu	Ser	Gly	Asn	Val	Asp	Asp	Ala	Asn	Gly	Met	Asn	Asn	Val	Asp
865					870					875					880
Asp	Thr	Asn	Asn	Met	Asn	Asn	Val	Asp	Gly	Thr	Asn	Asn	Met	Asn	Asn

885										890					895				
Val	Asp	Gly	Thr	Asn	Asn	Met	Asn	Asn	Met	Asp	Gly	Arg	Asn	Asn	Met				
			900						905						910				
Asn	Asn	Ile	Asn	Ser	Val	Asp	Asn	Met	Asn	Asn	Leu	Asn	Asn	Asn	Asp				
		915							920						925				
Gly	Glu	Glu	Glu	Glu	Glu	Cys	Val	Asn	Asp	Val	Leu	Asn	Tyr	Asp	Asn				
		930							935						940				
Asn	Asn	Tyr	Ala	Ile	Asn	Glu	Asp	Ala	Glu	Glu	Tyr	Ile	Lys	Asn	Thr				
		945						950						955					960
Ser	Gly	Glu	Arg	Ala	Val	Ile	Ile	Cys	Ser	Glu	Lys	Arg	Ile	Tyr	Glu				
				965						970					975				
Lys	Asn	Gly	Asn	Gly	Asp	Ile	Ile	Thr	Arg	Asn	Tyr	Lys	Asn	Glu	Glu				
				980					985						990				
Arg	Tyr	Ile	Tyr	Leu	Lys	Lys	Trp	Ile	Pro	Phe	Lys	Ser	Met	Ile	Leu				
			995				1000								1005				
Ser	Lys	Leu	Glu	Lys	Arg	Lys	Arg	Asn	Arg	Lys	Glu	Ala	Tyr	Asn	Thr				
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Pro	Arg	Val	Leu	Ile	Leu	Ile	His	Ser	Phe	Leu	Phe	Ile	Leu	Ile	Val				
			1025				1030								1035				1040
Phe	Ile	Phe	Leu	Met	Val	Phe	Phe	Lys	Lys	Glu	Pro	Ile	Phe	Arg	Phe				
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Asn	Met	Pro	Ser	Val	Asn	Lys	Arg	Leu	Asn	Asn	Phe	Phe	Lys	Ser	Thr				
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Ser	Phe	His	Glu	Ile	Ile	Pro	Asn	Ser	Val	Gly	Lys	Cys	Lys	Thr	Lys				
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Lys	Tyr	Ile	Ala	Lys	Glu	Pro	Cys	Phe	Asn	Val	Gly	His	Ile	Tyr	His				
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Glu	Glu	Lys	Thr	Phe	Tyr	His	Ala	Thr	Leu	Leu	Phe	Leu	Gln	Gly	Leu				
						1110								1115					1120
Arg	Ser	Val	Lys	Ile	Met	Asn	Met	Asn	Phe	Tyr	Tyr	Glu	Lys	Gly	Ile				
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Tyr	Tyr	Leu	Ser	Leu	Asp	Gly	Tyr	Phe	Lys	His	Ile	Ile	Gly	Pro	Leu				
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Phe	Leu	Lys	Leu	Cys	Leu	Gly	Thr	Asn	Phe	Cys	Pro	Ile	Ser	Thr	Tyr				
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Ala	Phe	Leu	Val	Gly	Ser	Lys	Pro	Thr	Phe	Ser	Val	Asn	Val	Ala	Val				
						1175									1180				
Gln	Cys	Asn	Asn	Lys	Lys	Pro	Pro	Tyr	Tyr	Met	Thr	Asp	Ile	Ile	Val				
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Lys	Asp	Leu	Lys	Ile	Thr	Lys	Ile	Glu	Ile	Val	Lys	His	Ser	Asp	Val				
						1205									1215				
Ile	Asp	Asn	Val	Asp	Ile	Lys	Leu	Asp	Asp	Val	Gln	Asp	Arg	Val	Gln				
						1220									1230				
Glu	Lys	Val	Asn	Ala	Met	Leu	Glu	Ala	Lys	Lys	Lys	Ile	Ile	Val	Trp				
								1240							1245				
Lys	Asn	Gln	Lys	Tyr	His	Leu	Glu	Gly	Phe	Leu	Asn	Tyr	Leu	Ile	Ser				
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 Val Glu Asp Ile Asn Ile Lys Lys Glu Glu Lys Ser Ser Ser Glu Pro
 35 40 45
 Pro Phe Ile Pro Ile Lys Asn Lys Ile Asp Asn Val His Thr Lys Asn
 50 55 60
 Asn Asn Gln Tyr Asn Leu His Asn Asn Lys Ser Asn Lys Thr His Leu
 65 70 75 80
 Thr Tyr Gly Thr His Thr Ser Phe Leu Gln Asn Cys Thr Ile Asn Asp
 85 90 95
 Cys Val Asp Val Asp Asn Lys Asp Ser Glu Ile Asn Asn Ile Thr Lys
 100 105 110
 Glu Lys Asp Asp Asn Asn Asn Asn Asn Gly Thr Lys Gln Ile Glu Glu
 115 120 125
 Lys Asn Lys Ile Asn Lys Ser Asp Leu His Arg Gln Asn Glu Leu Asn
 130 135 140
 Leu Gln Ser Gly Lys Asn Glu Gln Asp Ile Asn Lys Asn Glu Lys Gly
 145 150 155 160
 Lys Gln Asp Ile Ser Asn Ser Asn Ala Glu Asn Lys Lys Asp Val Lys
 165 170 175
 Glu Gly Val Lys Glu Leu Glu Glu Lys Lys Lys Glu Glu Lys Ile Ser
 180 185 190
 Asp Asp His Lys Val Glu Glu Asn Lys Lys Ser Asp Asp His Lys Val
 195 200 205
 Glu Glu Asn Lys Lys Ser Asp Asp His Lys Val Glu Glu Asn Lys Lys
 210 215 220
 Ser Asp Asp His Lys Ile Glu Glu Val Lys Lys Val Glu Glu His Glu
 225 230 235 240
 Glu Asp Glu Glu Glu Asp Lys Lys Glu Lys Lys Ser Glu Asn Lys Asn
 245 250 255
 Lys Asp Glu Asn Lys Asp Glu Asn Asp Glu Asp Asn Asp Glu Ile Ser
 260 265 270
 Asp Glu Asp Glu Val Asp Asp Asp Val Glu Glu Asp Lys Asn Glu Asn
 275 280 285
 Asp Asp Ile Asp Asp Asp Lys Lys Glu Thr Asp Lys Thr His Leu Glu
 290 295 300
 Glu Glu Glu Asn Glu Ile Ile Glu Lys Glu Phe Ser Asp Lys Lys Lys
 305 310 315 320

Asn Gly Lys Asn Lys Asp Thr Lys Lys Glu Lys Ser Lys Asp Thr Glu
 325 330 335
 Lys Glu Lys Ser Lys Asp Ile Glu Lys Glu Lys Ser Lys Asp Lys Glu
 340 345 350
 Lys Glu Lys Ser Lys Asp Lys Glu Lys Glu Lys Gly Lys Asp Lys Glu
 355 360 365
 Lys Glu Lys Ser Lys Asp Ile Glu Lys Glu Lys Glu Lys Asp Lys Asp
 370 375 380
 Ile Glu Lys Glu Lys Ser Lys Asp Thr Ala Lys Glu Lys Glu Lys Asp
 385 390 395 400
 Lys Asp Ile Glu Lys Glu Lys Ser Lys Asp Met Glu Lys Leu Lys Asn
 405 410 415
 Lys Gln Asn Asp Glu Lys Lys Lys Asp Asp Asn Glu Lys Lys Lys Asn
 420 425 430
 Asp Lys Gln Asp Ile His Asp Asp Asn Asp Asp Glu Asn Asp Met Glu
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 Glu Ile Glu Glu Asn Asp Asp Glu Glu Asp Glu Asp Glu Asp Met Glu
 450 455 460
 Asn Lys Lys Lys Lys Lys Lys Gly Lys Asn Gly Asn Glu Asn Gly Asn
 465 470 475 480
 Glu Asn Gly Ser Glu Asn Gly Asn Glu Asn Gly Asn Glu Asn Gly Asn
 485 490 495
 Glu Asn Glu Asn Lys Asn Glu Ser Glu Asn Glu Asn Glu Asn Glu Asn
 500 505 510
 Glu Asn Glu Asn Gly Asn Glu Asn Glu Asn Glu Lys Glu Asn Glu Lys
 515 520 525
 Asp Lys Asn Ile Lys Glu Ile Glu Asn Val Thr Asn Ala Asn Lys Glu
 530 535 540
 Asn Tyr Glu Lys Ile Asn Lys Asn Ser Glu Ile Thr Ile Thr Lys Ser
 545 550 555 560
 Asn Ile Asp Ile Tyr Asn Asn Asn Arg Asn Asn Asp Ile Asp Lys Val
 565 570 575
 Asn Asn His Ile Phe Thr Asn Gln Gln Lys Lys His Asn Leu His Asn
 580 585 590
 Glu Gln Asn Lys Phe Asn Glu Thr Leu Asn Val Ser Thr Asn His Lys
 595 600 605
 Asn His Tyr Glu Glu Lys Lys Lys Tyr Glu Ser Asn Met Phe Asn Val
 610 615 620
 Asp Lys Arg Met His Lys Asn Leu Thr Ser Met Asp Thr Ile Leu His
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 Asn Asp Lys Lys Lys Lys Lys Lys Asn Lys
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<210> 136

<211> 885

<212> PRT

<213> Plasmodium falciparum

<400> 136

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Tyr Ser Lys Ser Leu Ser Asp Asp Glu Ser Asp Thr Tyr Gln Gly Lys
 35 40 45

Asp Tyr Asp Asn Lys Ser Pro Tyr Tyr Ile Tyr Ser His Leu Leu Lys
 50 55 60

Ile Ile Ile Lys Lys Asn Lys Phe Asn Gly Asp Lys Lys Leu Ile Tyr
 65 70 75 80

Glu Tyr Ala Asn Gly His Pro Lys Ser Ser Tyr Thr Tyr Asp Thr Phe
 85 90 95

Phe Asn Arg Val Leu Ser Phe Ser Asp Gly Leu Asn Thr Tyr Glu Gly
 100 105 110

Thr Gly Ile Gln Val Lys Lys Tyr Asn Glu Glu Gln Asn Asn Gly Met
 115 120 125

Phe Arg Leu Leu Gly Leu Tyr Gly Ser Asn Ser Ala Asn Trp Ile Thr
 130 135 140

Ala Asp Ile Ser Cys Met Leu Ser Gly Val Thr Thr Val Val Met His
 145 150 155 160

Ser Lys Phe Ile Leu Asn Glu Ile Val Asp Ile Leu Asn Glu Val Lys
 165 170 175

Leu Glu Trp Leu Cys Leu Asp Leu Asp Phe Val Glu Asn Leu Leu Tyr
 180 185 190

Leu Lys Ser Ser Leu Pro His Leu Lys Lys Leu Ile Ile Leu Asp Thr
 195 200 205

Phe Ile Asn Pro Ser Ile Cys Asn Arg Lys Gly Gly Lys Ser Lys Asn
 210 215 220

Gly Asp Glu Gly Gln Ala Val Gly Asn Asn Gly Glu Lys Glu Glu Lys
 225 230 235 240

Glu Glu His Lys Gly Glu Ala Glu Glu Asp Asp Glu Asp Gly Glu Asp
 245 250 255

Asp Glu Asp Asp Glu Asp Asp Glu Asp Gly Glu Asp Asp Glu Asp Asp
 260 265 270

Glu Asp Gly Glu Asp Gly Glu Asp Asp Glu Asp Asp Glu Asp Gly Glu
 275 280 285

Asp Gly Glu Asp Asp Asp Asp Asp Glu Lys Gly Asp Asn Ile Lys Asp
 290 295 300

Asp Tyr Leu Tyr Lys Lys Gln Asn Glu Ile Pro Asn Glu Asn Ile Val
 305 310 315 320

Glu Glu Gln Gly Glu Gly Glu Asp Gln Arg Asn Val His Gln Thr Val
 325 330 335

Gln Pro Thr Pro Tyr Gly Ala Asn Thr Lys Gln Tyr Leu Lys Lys Lys
 340 345 350

Lys Lys Lys Arg Thr Glu Asn Val Glu Glu Arg Lys Lys Ser Asn Met
 355 360 365
 Lys Arg Lys Glu Ser Lys Trp Ile Lys Lys His Met Tyr Pro Lys Leu
 370 375 380
 Ile Tyr Glu Asn Ile Asp Leu Glu Asp Ile Cys Glu Asp Glu Lys Lys
 385 390 395 400
 Lys Ile Glu Lys Leu Lys Tyr Leu Lys Glu Glu Ala Lys Lys Tyr Gly
 405 410 415
 Ile Gln Ile Ile Gln Phe Asn Glu Met Leu Ile Asn Lys Asn Asn Asn
 420 425 430
 Met Leu Thr Tyr Asn Ile Gln Asn Asp Lys Glu Asn Phe Ile Ser Thr
 435 440 445
 Ile Val Tyr Thr Ser Gly Thr Ser Gly Arg Pro Lys Gly Val Met Leu
 450 455 460
 Ser Asn Lys Asn Ile Tyr Tyr Met Val Ile Pro Leu Ser Lys His Ser
 465 470 475 480
 Ile Phe Thr Tyr Asn Val Asp Thr His Leu Ser Tyr Leu Pro Leu Ser
 485 490 495
 His Ile Tyr Glu Arg Ile Asn Ile Tyr Leu Cys Phe Val Leu Thr Val
 500 505 510
 Glu Ile His Ile Trp Ser Lys Asn Leu Lys Tyr Phe Ser Ser Asp Ile
 515 520 525
 Leu Val Ser Lys Ser Ser Phe Leu Ala Gly Val Pro Lys Val Phe Asn
 530 535 540
 Arg Ile Tyr Asn Asn Val Ile Thr Glu Ile Gly Lys Leu Pro Phe Leu
 545 550 555 560
 Lys Lys Phe Phe Val Glu Lys Ile Leu Ser Leu Lys Arg Ser Asn Met
 565 570 575
 Asn Gly Lys Phe Ser Lys Phe Ile Glu Ala Ile Thr Asn Ile Ser Lys
 580 585 590
 Lys Ile Arg Ser Lys Ile Asn Pro Asn Leu Asn Thr Phe Ile Thr Gly
 595 600 605
 Gly Gly Lys Thr Ser Pro Lys Val Ile Ser Glu Leu Ser Leu Leu Leu
 610 615 620
 Asn Val Ser Ile Gln Gln Gly Tyr Gly Leu Thr Glu Thr Thr Gly Pro
 625 630 635 640
 Leu Phe Val Gln His Arg Lys Asp Lys Asp Pro Glu Ser Thr Gly Gly
 645 650 655
 Pro Ile Ser Pro His Val Leu Tyr Lys Val Gln Ser Trp Glu Ile Tyr
 660 665 670
 Asn Ala Lys Asp Ser Leu Pro Arg Gly Glu Leu Leu Ile Lys Gly Asp
 675 680 685
 Cys Ile Phe His Gly Tyr Phe Val His Lys Asp Ile Thr Asp Asn Ser
 690 695 700
 Phe Thr Glu Asp Lys Phe Phe Lys Thr Gly Asp Ile Val Gln Ile Asn
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 Lys Asn Gly Ser Leu Thr Phe Leu Asp Arg Ser Lys Gly Leu Leu Lys

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<210> 137
<211> 244
<212> PRT
<213> Plasmodium falciparum
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Lys	Leu	Tyr	Thr	Ser	Gly	Leu	Arg	Ser	Asp	Thr	Lys	Glu	Lys	Tyr	Gly	
			20					25					30			
Glu	Ile	Pro	Ser	Ser	Asn	Lys	Asn	His	Asn	Leu	Ile	Glu	Lys	Tyr	Asn	
		35					40					45				
Glu	Leu	Gln	Ser	Leu	Leu	Ser	Lys	Glu	Glu	Glu	Lys	Tyr	Asp	Phe	Val	
	50					55					60					
Lys	Asn	Glu	Leu	Gly	Asp	Leu	Gln	Lys	Gln	Lys	Asp	Leu	Leu	Lys	Trp	
65					70					75					80	
His	Leu	Cys	Asn	Asn	Ile	Lys	Lys	Leu	Ser	Met	Lys	Arg	Ser	Asp	Tyr	
				85					90					95		
Lys	Phe	Lys	Thr	Glu	Thr	Lys	Ser	Lys	Leu	Glu	Ser	Lys	Leu	Lys	Ser	
			100					105					110			
Leu	Lys	Asp	Met	Asn	Lys	Ile	His	Lys	Phe	Glu	His	Asp	Thr	Leu	Glu	
		115					120					125				
Glu	Leu	Val	His	Lys	Met	Glu	Gln	Glu	Leu	Glu	Thr	Lys	Met	Tyr	Ile	
	130					135					140					
Lys	Asn	Asp	Ile	Glu	Asn	Ile	Phe	Asn	Glu	Cys	Ile	Asn	Lys	Lys	Asp	
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Glu	Tyr	Leu	Lys	Asp	Ile	Thr	Gln	Glu	Arg	Ile	Ser	Val	Phe	Lys	Glu	

165																170																175																
Arg	Ile	Phe	Asn	Asp	Cys	Glu	Glu	Cys	Gln	Glu	Ile	Thr	Thr	Leu	Asn	Asn	Met	Lys	Glu	Cys	Ile	Val	Asn	Met	Cys	Asn	Tyr	Asn	Phe	Asn	Ser	Cys	Lys	Ile	Ile	Ser	Leu	Leu	Phe	Tyr	Asn	Arg	Ile	Leu	Lys	Cys	Val	
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Asn	Met	Lys	Glu	Cys	Ile	Val	Asn	Met	Cys	Asn	Tyr	Asn	Phe	Asn	Ser	Asn	Met	Lys	195	Glu	Cys	Ile	Val	Asn	Met	Cys	Asn	Tyr	Asn	Phe	Asn	Ser	Cys	Lys	Ile	Ile	Ser	Leu	Leu	Phe	Tyr	Asn	Arg	Ile	Leu	Lys	Cys	Val
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Cys	Lys	Ile	Ile	Ser	Leu	Leu	Phe	Tyr	Asn	Arg	Ile	Leu	Lys	Cys	Val	Cys	Lys	Ile	Ile	Ser	Leu	Leu	Phe	Tyr	Asn	Arg	Ile	Leu	Lys	Cys	Val	Cys	Lys	Ile	Ile	Ser	Leu	Leu	Phe	Tyr	Asn	Arg	Ile	Leu	Lys	Cys	Val	
215																220																225																
Ile	Phe	Lys	Asn	Lys	Met	Asn	Leu	Ile	His	Phe	Tyr	Asp	Glu	Leu	Leu	Ile	Phe	Lys	Asn	Lys	Met	Asn	Leu	Ile	His	Phe	Tyr	Asp	Glu	Leu	Leu	Ile	Phe	Lys	Asn	Lys	Met	Asn	Leu	Ile	His	Phe	Tyr	Asp	Glu	Leu	Leu	
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Gln	Tyr	Leu	Met	Leu	Asn	Asn	Lys	Met	Asp	Ile	Leu	Lys	Glu	Phe	Lys	Gln	Tyr	Leu	Met	Leu	Asn	Asn	Lys	Met	Asp	Ile	Leu	Lys	Glu	Phe	Lys	Gln	Tyr	Leu	Met	Leu	Asn	Asn	Lys	Met	Asp	Ile	Leu	Lys	Glu	Phe	Lys	
245																250																255																
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260																265																270																
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Gly	Pro	Leu	Tyr	Asn	Asn	His	His	Asn	Asn	His	Asn	Asn	His	Ser	Asn	Gly	Pro	Leu	Tyr	Asn	Asn	His	His	Asn	Asn	His	Asn	Asn	His	Ser	Asn	Gly	Pro	Leu	Tyr	Asn	Asn	His	His	Asn	Asn	His	Asn	Asn	His	Ser	Asn	
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His	Asn	Asn	His	Ile	Asn	His	Asn	Asn	His	Ser	Asn	His	Asn	Asn	His	His	Asn	Asn	His	Ile	Asn	His	Asn	Asn	His	Ser	Asn	His	Asn	Asn	His	His	Asn	Asn	His	Ile	Asn	His	Asn	Asn	His	Ser	Asn	His	Asn	Asn	His	
335																340																345																
Asn	Asn	His	Asn	Asn	His	Asn	Asn	His																																								

245										250					255				
Ala	Glu	Tyr	Asp	Val	Glu	Lys	Leu	Glu	Lys	Ile	Lys	Asp	Leu	Lys	Glu				
			260						265					270					
Arg	Ser	Lys	Asn	Val	Gly	Ile	Arg	Phe	Leu	Glu	Phe	Asp	Asp	Val	Ser				
		275					280					285							
Ser	Val	Pro	Thr	Lys	Ile	Tyr	Asn	Ile	Gln	Asn	Asp	Glu	Pro	Asp	Phe				
	290					295					300								
Ile	Thr	Ser	Ile	Val	Tyr	Thr	Ser	Gly	Thr	Ser	Gly	Lys	Pro	Lys	Gly				
305					310					315					320				
Val	Met	Leu	Ser	Asn	Leu	Asn	Met	Tyr	Asn	Ala	Ile	Val	Pro	Leu	Cys				
				325					330						335				
Lys	His	Ser	Met	Leu	Asn	Tyr	His	Pro	Lys	Ala	His	Leu	Ser	Tyr	Leu				
			340					345					350						
Pro	Val	Ser	His	Ile	Tyr	Glu	Arg	Val	Asn	Val	Tyr	Val	Ala	Phe	Leu				
		355					360					365							
Ser	Gly	Ile	Lys	Ile	Asp	Ile	Trp	Ser	Lys	Asn	Ile	Asn	Phe	Phe	Ser				
	370					375					380								
Arg	Asp	Ile	Phe	Asn	Ser	Lys	Gly	Glu	Leu	Leu	Val	Gly	Val	Pro	Lys				
385					390					395					400				
Val	Phe	Asn	Arg	Ile	Tyr	Ser	Asn	Ile	Met	Ala	Glu	Ile	Asn	Asn	Leu				
				405					410					415					
Ser	Ala	Thr	Lys	Arg	Arg	Asn	Ile	Lys	Asn	Val	Phe	Ser	Leu	Arg	Arg				
			420					425					430						
Ser	Val	Asn	Cys	Ala	Cys	Phe	Thr	Asn	Leu	Leu	Glu	Gly	Leu	Thr	Gly				
		435					440					445							
Tyr	Ser	Ser	Lys	Ile	Arg	Asn	Cys	Val	Asn	Pro	Asn	Leu	Glu	Val	Ile				
	450					455					460								
Leu	Asn	Gly	Gly	Gly	Lys	Leu	Ser	Pro	Arg	Ile	Ala	Glu	Glu	Leu	Arg				
465					470					475					480				
Val	Leu	Leu	Asn	Val	Asn	Phe	Tyr	Gln	Gly	Tyr	Gly	Leu	Thr	Glu	Thr				
			485						490					495					
Thr	Gly	Pro	Ile	Phe	Val	Gln	Gln	Lys	Arg	Asp	Tyr	Asn	Thr	Glu	Ser				
			500					505					510						
Ile	Gly	Gly	Pro	Ile	Ala	Pro	Asn	Thr	Lys	Tyr	Lys	Val	Arg	Thr	Trp				
		515					520					525							
Glu	Thr	Tyr	Lys	Ala	Ser	Asp	Ser	Thr	Pro	Lys	Gly	Glu	Leu	Leu	Ile				
	530					535					540								
Lys	Ser	Asp	Ser	Ile	Phe	Lys	Gly	Tyr	Phe	Leu	Glu	Arg	Glu	Leu	Thr				
545					550					555					560				
Glu	Asn	Ser	Phe	Thr	Tyr	Asp	His	Phe	Phe	Val	Thr	Gly	Asp	Ile	Val				
				565					570					575					
Gln	Ile	Asn	Asp	Asn	Gly	Ser	Leu	Thr	Phe	Leu	Asp	Arg	Ser	Lys	Gly				
				580				585					590						
Leu	Val	Lys	Leu	Ser	Gln	Gly	Glu	Tyr	Ile	Glu	Thr	Asp	Leu	Leu	Asn				
		595					600					605							
Asn	Ile	Tyr	Ser	Glu	Ile	Pro	Phe	Ile	Asn	Asn	Cys	Val	Val	Tyr	Gly				
	610					615					620								

Asp Asp Ser Leu Asp Glu Ala Leu Ala Ile Ile Ser Val Asp Lys Tyr
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 Leu Leu Phe Arg Cys Leu Arg Asp Asp Asn Met Leu Asn Glu Thr Gly
 645 650 655
 Ile Asn Glu Lys Asn Tyr Met Asp Lys Leu Ser Asp Gln Asn Ile Asn
 660 665 670
 Thr Lys His Phe Ile Asp Tyr Val Lys Asn Lys Met Leu Glu Val Tyr
 675 680 685
 Asn Asn Thr Asn Leu Asn Arg Tyr Asn Ile Ile Asn His Ile Tyr Leu
 690 695 700
 Thr Ser Lys Thr Trp Asp Thr Thr Asn Tyr Leu Thr Pro Thr Met Lys
 705 710 715 720
 Val Lys Arg Phe Ser Val Ile Gln Asp Tyr Ala Phe Phe Ile Asp Gln
 725 730 735
 Val Lys Asn Ile Phe Lys Lys Lys Leu Lys Gly Gln Lys Glu Arg Thr
 740 745 750
 Lys Arg Leu Gln Lys Lys Thr Ser Asp Glu Gln Glu Ile Lys Asn Asp
 755 760 765
 Glu Asn Asp Gln Glu Lys Ser Lys Lys Ser Tyr Phe Ser Arg Leu Ser
 770 775 780
 Gln Lys Arg Lys Ser Arg Ser Gln Glu Lys Asn Lys Ser Thr Ser Gln
 785 790 795 800
 Glu Lys Asn Lys Ser Thr Ser Gln Glu Lys Asn Lys Ser Lys Ser Lys
 805 810 815
 Glu Lys Asn Thr Ser Thr Leu Pro Gln Asp Asn Ile Ser Ile Pro Val
 820 825 830
 Gln Asn Lys Ile Glu Lys Pro Gln Gln Asn Asn Met Ser Asn Ile Thr
 835 840 845
 Leu Lys Asn Thr Leu Lys Ser Thr Asp Ala Ser Leu Lys Ile Pro Glu
 850 855 860
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 Arg Glu Glu Leu Glu Met Asn Ser
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<210> 139

<211> 972

<212> PRT

<213> Plasmodium falciparum

<400> 139

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 Asn Asp Asn Asn Lys Thr Asn Asp Asn Tyr Cys Asn Gln Val Ile Asp
 35 40 45
 Asn Thr Asn Asp Glu Val Ile Glu Thr Pro Glu Gln Asn Asp Asn Ile
 50 55 60

Lys Lys Glu Asn Pro Ser Ser Asn Asn Asn Asn Asn Asn Asn Lys Asp
 65 70 75 80
 Asp Ala Ile Cys Asn Asn Asn Lys Asp Asp Thr Ile Cys Asn Asn Lys
 85 90 95
 Asp Asp Thr Ile Cys Asn Asn Asn Lys Asp Asp Thr Ile Cys Asn Asn
 100 105 110
 Lys Asp Asp Thr Ile Cys Asn Asn Asn Lys Asp Asp Ile Ile Cys Asn
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 Asn Lys Asp Asp Thr Met Cys Asn Asn Lys Asp Asp Thr Ile Cys Asn
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 Asn Lys Asp Asp Thr Ile Cys Asn Asn Lys Asp Asp Ile Ile Cys Asn
 145 150 155 160
 Asn Lys Asp Asp Ile Ile Cys Asn Asn Asn Asp Asp Thr Ile Cys Asn
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 Asn Lys Asp Asp Thr Ile Cys Asn Asn Asn Asp Asp Thr Ile Cys Asn
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 Asn Asn Asp Asp Thr Ile Cys Asn Asn Lys Asp Asp Leu Met Asn Asp
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 Lys Asn Glu Lys Pro Leu Asn Asn Gly Asp Lys Glu Asp Pro Leu Asn
 225 230 235 240
 Asn Asn Glu Ser Asn Asn Met Asp Lys Asn Lys Asn Asp Glu Glu Gly
 245 250 255
 Ser Ser Cys Leu Ser Ser Leu Gln Asn Glu Gly Val Asp Ile Asn Gln
 260 265 270
 Thr Lys Asp Tyr Lys Glu Lys Lys Arg Val Ser Asp Ala Ser Asp Ile
 275 280 285
 Tyr Ala Arg Thr Asp Ser Val Asn Ser Asn Leu Ile Lys Ile Ser Gln
 290 295 300
 Ser Ser Glu Glu Trp Glu Pro Gln Asn Lys Trp Thr Leu Ser Val Leu
 305 310 315 320
 Phe Gln Asn Ile Lys Ser Ile Val Val Lys Asn Tyr Ile Phe Val Ala
 325 330 335
 Lys Lys Cys Gly Ile Pro Asn Gln Pro Asn Lys Pro Gly Pro Val Leu
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 Ala Ile Ser Ile Glu Lys Ala Asn Asn Asn Asp Ser Asp Asn Ile Ile
 355 360 365
 Val Gln Thr Pro Cys Ala Tyr Glu Lys Tyr Ser Leu Arg Gly Lys Leu
 370 375 380
 Ile Gln His Lys Ser Leu Tyr Pro Cys Thr Ile Thr Cys Met Met Asn
 385 390 395 400
 Gly Ser Ile Gly Gly Ile Gly Lys Val Val Ile Leu Gly Glu Gln Asn
 405 410 415
 Gly Asn Val Leu Ile Tyr Lys Ile Asp Lys Phe Glu Cys Ile Leu Lys
 420 425 430

Leu	Asn	Thr	Lys	Glu	Cys	Leu	Lys	Lys	Tyr	Phe	Asn	Asn	Asn	Pro	Thr
		435					440					445			
Thr	Arg	Arg	Lys	Ser	Ile	Asn	Asn	Tyr	Met	Asp	Phe	Lys	Glu	Lys	Val
	450					455					460				
Val	Asn	Tyr	Tyr	His	His	Pro	Ser	Asn	Asp	Lys	Glu	Gln	Gln	Lys	Gln
465					470					475					480
Ser	Thr	Gln	Tyr	Asn	His	Asn	Lys	His	Asn	Asn	Asn	Phe	Ile	Asn	Asn
				485					490					495	
Leu	Asp	Pro	Ser	Gln	Thr	Asn	His	Asn	Asn	Pro	Tyr	Asp	Asp	Asn	Asp
			500					505					510		
Leu	Ser	Tyr	Gln	Ile	Ser	Gly	Ile	Ser	Val	Lys	Ser	Thr	Phe	Ala	Asn
		515					520					525			
Phe	Ile	His	Trp	Ile	Ile	Ala	Gly	Asn	Met	Lys	Gly	Tyr	Ile	Phe	Val
	530					535					540				
Trp	Glu	Val	Pro	Ser	Gly	Asn	Ile	Ile	Lys	Ile	Leu	Leu	Pro	Pro	Leu
545					550					555					560
Tyr	Phe	Phe	Asn	Glu	Ala	Lys	Arg	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				565					570					575	
Lys	Arg	Lys	Asn	Tyr	Asn	Asn	Pro	Asn	Tyr	Pro	Tyr	Ser	Ser	Ser	Ser
			580					585					590		
Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Phe	Ser
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Ser	Ser	Ser	Val	Ser	Ser	Tyr	Tyr	Ser	Asp	Asp	Phe	Tyr	Tyr	Ala	Ser
	610					615					620				
Asn	Gly	Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Arg	Lys	Lys	Lys	Lys	Thr
625					630					635					640
Asn	Thr	Asn	Lys	Asn	Lys	Asn	Lys	Asn	Ile	Asn	Ile	Asn	Glu	Ile	Lys
				645					650					655	
Lys	Asn	Thr	Asn	Glu	Val	Gln	Asn	Gln	Asn	Lys	Gln	Asn	Tyr	Asn	Gly
			660					665					670		
Thr	Gln	Asn	Asn	Leu	Ser	Ile	Ser	His	Asp	Thr	Pro	Asn	Ser	Ile	Asn
		675					680					685			
Val	Asn	Glu	Lys	Leu	Glu	Lys	Arg	Glu	Glu	Val	Asn	Lys	Gln	Asn	Asn
		690				695					700				
Gly	Phe	Thr	Asn	Ser	Asn	Glu	Gln	Asn	Ser	Thr	Tyr	Asn	Ser	Asp	Asp
705					710					715					720
Asn	Ser	Tyr	Asn	Asn	Ser	Asp	Glu	Ser	Ser	Asp	Asp	Asn	Ser	Asp	Tyr
				725					730					735	
Cys	Ser	Asp	Asp	Leu	Tyr	Ser	Asp	Glu	Tyr	Ser	Glu	Ser	Asp	Thr	Ser
			740					745					750		
Pro	Asn	Asn	Ser	Thr	Asn	Glu	Ser	Tyr	Asp	Thr	Asn	Ser	Ile	His	Asn
			755				760					765			
Lys	Arg	Lys	Lys	Asn	Lys	Lys	Asn	Thr	Tyr	Asn	Asp	Ile	Ser	Asn	Lys
	770					775					780				
Cys	Tyr	Val	Ser	Ala	Ile	Leu	Ala	Val	Thr	His	Lys	Tyr	Glu	Leu	Trp
785					790					795					800
Val	Ala	Phe	Gly	Asn	Gly	Tyr	Ile	Ala	Val	Tyr	Asp	Leu	Tyr	Asp	Phe

805								810				815			
Gln	Leu	Leu	Leu	Tyr	Thr	Cys	Ile	Ser	Lys	Ser	Pro	Ile	Met	Asp	Leu
			820					825					830		
Lys	Tyr	Ser	Lys	Ile	Leu	Glu	Asp	Val	Leu	Ile	Leu	Ile	Gly	Asn	Asn
		835					840					845			
Tyr	Leu	Ser	Val	Trp	Asp	Thr	Lys	Thr	Leu	Lys	Gln	Val	Arg	Lys	Ile
	850					855					860				
Pro	Thr	Ser	Gln	Ile	Thr	Ser	Lys	Asn	Ser	Ser	Leu	Ser	Thr	Ile	Tyr
865					870					875					880
Leu	Leu	Glu	Ser	Pro	Asn	Ser	Trp	Lys	Tyr	Lys	Gln	Val	Val	Leu	Ile
				885					890					895	
Ala	Gly	Cys	Asn	Asn	Gly	Ser	Val	Cys	Leu	Thr	Asn	Ile	Thr	Lys	Lys
			900					905					910		
Val	Asp	Gly	Asp	Leu	Thr	Phe	Ser	Tyr	Ile	Lys	Thr	Tyr	Asn	Lys	His
		915					920					925			
Phe	Glu	Pro	Tyr	Val	Pro	Ile	Ser	Tyr	Ile	Tyr	Ile	Glu	Pro	Thr	Ile
	930					935					940				
Asn	Ala	Ala	Phe	Val	Gly	Asp	Ala	Ser	Gly	Val	Val	Phe	Thr	Leu	Pro
945					950					955					960
Arg	Ile	Leu	Ser	Thr	Leu	Lys	Asn	Asn	Asp	Ser	Ser				
				965					970						

<210> 140

<211> 764

<212> PRT

<213> Plasmodium falciparum

<400> 140

Met	Arg	Asp	Lys	Glu	Asp	His	Pro	Asn	Val	Gln	Lys	Asn	Lys	Phe	Ser
1				5					10					15	
Tyr	Asp	Gly	Tyr	Asp	Asp	Lys	Tyr	Ser	Tyr	Asp	Gln	Asn	Tyr	Tyr	Asn
			20					25					30		
Asn	Leu	Asn	Asn	Met	Met	Thr	Asp	Ile	Lys	Thr	Lys	Lys	Lys	Lys	Tyr
		35					40					45			
Met	Pro	Pro	Ser	Ser	Asn	Phe	Pro	His	Ile	Val	Asn	Asn	Lys	Asn	Gly
	50					55					60				
Asn	Thr	Tyr	Thr	Lys	His	Asn	Tyr	Asn	Asn	Lys	Asp	Glu	Tyr	Ile	Ser
	65				70					75					80
Gly	Tyr	Asp	Ile	Lys	Tyr	Asn	Asn	His	Gly	Asp	Lys	Tyr	Gly	Ser	Asn
				85					90					95	
Thr	Thr	Tyr	His	Asn	Asn	Asn	Ser	Asp	Asn	Asn	Asn	Asn	Asn	Asn	Asn
			100					105					110		
Asn	Asn	Asn	Asn	Asn	Met	Tyr	Asn	Pro	Asn	Tyr	Tyr	Cys	Thr	Asn	Tyr
			115				120					125			
Glu	Asp	Arg	Cys	Tyr	Asn	Asn	Val	Ser	Asn	Ile	Gln	Asn	Lys	Val	Asn
	130						135				140				
Ile	Thr	Lys	Asn	Asp	Asp	Asp	Asp	Glu	Ile	Cys	Glu	Asn	Leu	Asn	Asp
145					150					155					160
Lys	His	Val	Asn	Asp	Pro	Leu	Asn	Val	Glu	Glu	Lys	Lys	Met	Leu	Glu

165										170					175				
Arg	Ile	Phe	Asn	Asp	Cys	Glu	Glu	Cys	Gln	Glu	Ile	Thr	Thr	Leu	Asn				
			180					185					190						
Asn	Met	Lys	Glu	Cys	Ile	Val	Asn	Met	Cys	Asn	Tyr	Asn	Phe	Asn	Ser				
		195					200					205							
Cys	Lys	Ile	Ile	Ser	Leu	Leu	Phe	Tyr	Asn	Arg	Ile	Leu	Lys	Cys	Val				
	210					215					220								
Ile	Phe	Lys	Asn	Lys	Met	Asn	Leu	Ile	His	Phe	Tyr	Asp	Glu	Leu	Leu				
225					230					235					240				
Gln	Tyr	Leu	Met	Leu	Asn	Asn	Lys	Met	Asp	Ile	Leu	Lys	Glu	Phe	Lys				
			245						250					255					
Lys	Tyr	Met	Asn	Leu	Ile	Ile	Gln	Asp	Gly	Tyr	Thr	Cys	Ala	Tyr	Tyr				
		260						265					270						
Lys	Asp	Lys	Asn	Ile	Ile	Asn	Asp	Leu	Leu	Gln	Met	Val	His	Val	Trp				
	275					280						285							
Lys	Lys	Leu	Leu	Ile	Asn	Asp	Met	Gln	Glu	Thr	Lys	Glu	Leu	Leu	Asn				
	290					295					300								
Ile	Phe	His	Tyr	Asp	Asn	Arg	Thr	Asp	Glu	Asn	Ile	Lys	Asn	Tyr	Glu				
305					310					315					320				
Gly	Pro	Leu	Tyr	Asn	Asn	His	His	Asn	Asn	His	Asn	Asn	His	Ser	Asn				
			325						330					335					
His	Asn	Asn	His	Ile	Asn	His	Asn	Asn	His	Ser	Asn	His	Asn	Asn	His				
		340						345					350						
Asn	Asn	His	Asn	Asn	His	Asn	Asn	His	Ser	Asn	His	Ser	Asn	His	Asn				
		355						360				365							
Asn	Arg	Asn	His	Asn	Tyr	Tyr	Asn	Asn	Tyr	Tyr	Leu	Tyr	Thr	Asn	Tyr				
	370					375					380								
Gln	Lys	His	Lys	Asn	Asn	Lys	Ile	Pro	Pro	Pro	Pro	Ser	Gly	Pro	Pro				
385					390					395					400				
Pro	Asn	Asn	Ile	Lys	Tyr	Asn	Asn	Val	His	Pro	Asn	Asn	Tyr	Asn	Pro				
			405						410				415						
Pro	Pro	Pro	Pro	Pro	Gly	Thr	Leu	Gln	Thr	Phe	Asn	Thr	Asn	Asp	Ser				
			420					425					430						
Phe	Lys	Gly	Leu	Ser	Ser	Tyr	Asp	Asn	Asn	Arg	Gln	Glu	His	Ile	Asp				
		435					440					445							
Asp	Phe	Lys	His	Asn	Phe	Asn	Ser	Asn	Ile	Asn	Ile	Asn	His	Ser	Met				
	450					455					460								
Glu	Tyr	Lys	Asp	Thr	Trp	Lys	Asn	Pro	Glu	Asn	Ile	Thr	Val	Gly	Phe				
465					470					475					480				
Leu	Ala	Thr	Ile	Leu	Lys	Met	Ile	Ser	Lys	Lys	Val	Lys	Lys	Leu	Gln				
			485						490					495					
Asn	Pro	Leu	Ile	Pro	Tyr	Thr	Pro	Ile	Asp	Thr	Ser	Tyr	Ala	Tyr	Gln				
		500						505					510						
Thr	Pro	Pro	Ser	Val	His	Val	Ser	Gln	Lys	Met	Asn	Glu	Lys	Ile	Asp				
		515					520					525							
Glu	Phe	Tyr	Asp	Glu	Leu	Ser	Phe	Ile	Leu	Asn	Asn	Glu	Glu	Val	Gln				
	530					535					540								

Ser Thr Asp Ile Ser Asp Thr Asn Asp Ile Asn Asp Val Tyr Glu Ser
 545 550 555 560
 Tyr Lys Lys Leu Thr Gly Glu His Lys Lys Gly Lys Lys Lys Asn Thr
 565 570 575
 Lys His Arg Asn Asn Asp Asn Asp Asn Gly Asn Gly Asn Gly Asn Gly
 580 585 590
 Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly
 595 600 605
 Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly
 610 615 620
 Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Gly Asn Asp Asn Asn
 625 630 635 640
 Asn Asn Asn Ile Lys Asp Asn Asn Phe Glu Tyr Glu Lys Lys Asp Glu
 645 650 655
 Asn Tyr Phe Ser Ser Asp Thr Asn Thr Thr Phe Ser Ser Leu Glu Ile
 660 665 670
 Leu Asp Asp Asn Met Leu Asp Leu Leu Val Asp Thr Asn Lys Leu Cys
 675 680 685
 Lys Asn Lys Lys Arg Lys Lys Ser Lys Asn Val Asn Phe Asn Gln Ile
 690 695 700
 Ala Ile Glu Asn Ser Gln Asn Trp Ser Glu Thr Gln Asn Tyr Asn Ser
 705 710 715 720
 Leu Asn Tyr Met Asp Ile Tyr Ser Ala Pro Asn Asn Thr Asn Asp Val
 725 730 735
 Phe Glu Asn Tyr Arg Arg Asn Lys Ala Tyr Val Tyr His Glu Thr Ile
 740 745 750
 Ala Gln Lys Phe Tyr Asp Leu Lys Phe Lys Asp Thr
 755 760

<210> 141
 <211> 403
 <212> PRT
 <213> Plasmodium falciparum

<400> 141
 Met Asp Lys Asn Thr Leu Lys Arg Arg Ser Arg Leu Leu Gln Lys Asn
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 Glu Ala Arg Met Ser Met Leu Leu Gly Arg Asn Leu Asp Asp Glu Ile
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 Ser Lys Glu Lys Lys Glu Ser Asn Lys Asn Asp Lys His Lys Lys Asn
 35 40 45
 Asp Gln His Lys Lys Asn Asp Lys Ser Asn Gln Asn Gly Glu Asp Asn
 50 55 60
 Gln Asn Gly Glu Asp Asn Gln Asn Asp Glu Ser Asn Gln Asn Asp Glu
 65 70 75 80
 His Lys Lys Asn Asp Glu His Lys Lys Asn Asp Glu His Asn Gln Asn
 85 90 95
 Asp Glu His Asn Gln Asn Asp Glu His Asn Gln Asn Asp Glu His Asn
 100 105 110

Gln Asn Asp Glu His Asn Gln Asn Asp Glu His Asn Gln Asn Asp Glu
 115 120 125
 His Asn Gln Asn Asp Glu His Asn Gln Asn Asp Glu Ser Asn Gln Asn
 130 135 140
 Asp Lys Asn Arg Lys Glu Ile Pro Pro Lys Glu Glu Lys Asp Lys Glu
 145 150 155 160
 Asn Asn Pro Ser Val Val Met Glu Asn Asn Asn Asn Ile Arg Lys Asp
 165 170 175
 Gln Asp Asn Lys Thr Ser Glu His Lys Ser Ser Thr Asn Ile Tyr Asn
 180 185 190
 Lys Asp Lys Asn Asn Asp Tyr Asn Lys Leu Leu Asp Lys Asp Asp Asn
 195 200 205
 Asn Asn Asn Asn Lys Asn Ile Asn Lys Asn Asp Glu Asn Asp Phe Thr
 210 215 220
 Ser Ile Asn Asn Asp Ile Pro Asn Lys Asn Lys Ile Thr Ser Gln Phe
 225 230 235 240
 Ile Ile Thr Lys His Glu Lys Leu His Phe Ile Ile Leu Ile Ile Leu
 245 250 255
 Cys Ile Phe Ile Ser Ile Phe Lys Val Tyr Tyr Asn Asn Lys Asn Asn
 260 265 270
 Leu Ile Tyr Lys Lys Lys Lys Lys Gly Asn Asn Asn Leu Asn Ile Val
 275 280 285
 Gln Met Ile Phe Phe Asn Phe Ile Asn Ser Pro Asn Phe Phe Phe Ser
 290 295 300
 Phe Ser Val Phe Tyr Asn Ile Leu Phe Leu Leu Ile Ile Met Leu Met
 305 310 315 320
 Tyr Ile Lys Lys Asn Asn Ile Thr Arg Lys Arg Ile Gln Asp Phe Phe
 325 330 335
 Val Asn Met Lys Asn Lys Leu Asn Asn Gln Asn Glu His Val Phe Tyr
 340 345 350
 Phe Ile Asn Asn Ala Val Leu Cys Ile Leu Phe Met Gly Arg Ile Phe
 355 360 365
 Lys Ser Tyr Ile Ile Ser Met Phe Leu Ile Asn Leu Phe His Asp Ile
 370 375 380
 Leu His Asn Tyr Leu Ile Gly Val Ser Met Leu Gln Pro Gln Lys Val
 385 390 395 400
 Val Leu Leu

<210> 142

<211> 1345

<212> PRT

<213> Plasmodium falciparum

<400> 142

Met Ala Val Lys Ile Glu Ala Pro Tyr Phe Thr Asn Asp Phe Val Lys
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Thr Gly Thr Asn Lys Asn Glu Gln Asn Asp Asp Asn Asp Lys Asn Pro
 20 25 30

Asn	Glu	Gln	Ile	Thr	Glu	Asp	Asp	Ser	Trp	Val	Val	Ile	Gly	Ser	Phe	35	40	45
Phe	Gly	Ser	His	Gly	Leu	Val	Asn	Gln	Gln	Ile	Glu	Ser	Tyr	Asn	Asp	50	55	60
Phe	Ile	Glu	Tyr	Arg	Met	Gln	Glu	Ile	Ile	Asp	Glu	His	Pro	Lys	Ile	65	70	75
Glu	Ile	Arg	Pro	Gln	Pro	Gln	Tyr	Arg	Thr	Asp	Arg	Asp	Glu	Asn	Asp	85	90	95
Asn	Ile	Ile	Tyr	Ser	Leu	Lys	Phe	Gly	Gln	Leu	Ser	Leu	Asp	Arg	Pro	100	105	110
Phe	Tyr	Asp	Glu	Lys	Asn	Leu	Ser	Asn	Lys	Asn	Leu	Trp	Pro	Gln	Glu	115	120	125
Ala	Arg	Leu	Arg	Asn	Leu	Thr	Tyr	Ser	Ser	Ala	Ile	Tyr	Ile	Asp	Ile	130	135	140
Glu	Gln	Ser	Thr	Tyr	Ile	Ile	Asp	Glu	Val	Thr	Lys	Lys	Pro	Val	Leu	145	150	155
Lys	Glu	Lys	Phe	Ile	Tyr	Glu	Arg	Ile	Asn	Leu	Gly	Arg	Ile	Pro	Leu	165	170	175
Met	Leu	Lys	Ser	Met	Phe	Cys	Trp	Thr	Lys	Gly	Leu	Pro	Glu	Asn	Glu	180	185	190
Ile	Ala	Asp	Met	Gly	Glu	Cys	Ser	Tyr	Asp	Gln	Gly	Gly	Tyr	Phe	Ile	195	200	205
Val	Asn	Gly	Gly	Glu	Lys	Val	Leu	Val	Ala	Gln	Glu	Arg	Met	Ala	Asn	210	215	220
Asn	Phe	Ile	Tyr	Val	Phe	Lys	Lys	Lys	Gln	Pro	Ser	Lys	Phe	Gly	Trp	225	230	235
Val	Ala	Glu	Ile	Arg	Ser	Gln	Met	Glu	Arg	Ser	Gln	Ala	Thr	Ser	Gly	245	250	255
Phe	Ser	Val	Lys	Met	Lys	Thr	Arg	Ser	Gly	Gly	Ser	Gln	Tyr	Gly	Ser	260	265	270
Asn	Lys	Ser	Gly	Gly	Gln	Leu	Val	Ala	Thr	Leu	Pro	Tyr	Ile	Arg	Thr	275	280	285
Glu	Ile	Ser	Val	Gly	Ile	Leu	Phe	Arg	Ala	Leu	Gly	Cys	Thr	Ser	Asp	290	295	300
Arg	Asp	Ile	Leu	Gln	Arg	Ile	Val	Tyr	Asp	Phe	Asn	Asp	Lys	Leu	Met	305	310	315
Ile	Asn	Ala	Leu	Arg	Glu	Thr	Leu	Glu	Glu	Cys	Ile	Glu	Tyr	Pro	Thr	325	330	335
Gln	Asp	Val	Cys	Leu	Asp	Phe	Ile	Gly	Lys	Arg	Gly	Pro	Thr	Val	Gly	340	345	350
Ala	Ser	Arg	Glu	Lys	Arg	Ile	Leu	Tyr	Ala	Lys	Glu	Leu	Leu	Arg	Lys	355	360	365
Glu	Val	Leu	Pro	His	Met	Gly	Thr	His	Pro	Gly	Val	Glu	Ser	Lys	Lys	370	375	380
Ser	Tyr	Phe	Ile	Gly	Tyr	Met	Ile	Asn	Arg	Leu	Leu	Leu	Ala	Glu	Leu	385	390	395

Gly Arg Ile Lys Glu Asp Asp Arg Asp His Phe Gly Lys Lys Arg Leu
 405 410 415
 Asp Ile Ala Gly Pro Leu Met Ala Ser Ser Phe Ser Thr Tyr Phe Arg
 420 425 430
 Lys Met Ala Lys Asp Val Arg Arg Val Leu Gln Arg Gln Ile Asp Asn
 435 440 445
 Asn Lys Pro Phe Asp Val Ala Gly Ala Ile Arg Ser Cys Ser Gln Ile
 450 455 460
 Thr Gln Gly Met Gln Tyr Gln Leu Ala Thr Gly Asn Trp Gly Lys Asp
 465 470 475 480
 Lys Asp Gly Lys Val Ile Arg Thr Gly Val Ala Gln Val Leu Asn Arg
 485 490 495
 Leu Thr Tyr Ser Ser Cys Leu Ser His Leu Arg Arg Leu Asn Thr Pro
 500 505 510
 Leu Gly Arg Glu Gly Lys Met Ala Lys Pro Arg Gln Leu His Asn Thr
 515 520 525
 His Trp Gly Met Ile Cys Pro Phe Glu Thr Pro Glu Gly Gln Ser Val
 530 535 540
 Gly Leu Val Lys Asn Leu Ser Leu Met Cys Asp Ile Ser Val Gly Thr
 545 550 555 560
 Ser Thr Asn Asn Ile Tyr Glu Phe Leu Thr Glu Trp Gly Leu Glu Ser
 565 570 575
 Leu Asp Glu Val Pro Pro Glu Leu Met Lys Glu Lys Val Lys Leu Phe
 580 585 590
 Leu Asn Gly Lys Trp Val Gly Cys Phe Asn Gln Ile Asp Asn Leu Ile
 595 600 605
 Glu Thr Leu Tyr Glu Leu Arg Arg Arg Cys Asp Ile Ser Pro Glu Ala
 610 615 620
 Ser Ile Val Arg Asp Val Asn Ser Lys Glu Ile Lys Ile Phe Thr Asp
 625 630 635 640
 Ser Gly Arg Ala Met Arg Pro Leu Tyr Val Val Lys Asn Val Asn Gly
 645 650 655
 Glu Asn Lys Leu Lys Leu Thr Lys Glu His Val Asn Asn Ile Glu Lys
 660 665 670
 Tyr Pro Glu Thr Tyr Asn Trp Asp Tyr Leu Ile Gln Glu Gly Ile Ile
 675 680 685
 Glu Tyr Ile Asp Cys Glu Glu Glu Glu Thr Thr Met Ile Ser Met Phe
 690 695 700
 Ile Asp Asp Leu Lys Thr Gly Thr Gly Tyr Tyr Asn Asn Phe Thr His
 705 710 715 720
 Cys Glu Ile His Pro Ser Leu Ile Leu Gly Val Cys Ala Ser Ile Ile
 725 730 735
 Pro Phe Ser Asp His Asn Gln Ser Pro Arg Asn Thr Tyr Gln Ser Ala
 740 745 750
 Met Gly Lys Gln Ala Met Gly Ile Tyr Val Thr Asn Phe Asn Ile Arg
 755 760 765
 Leu Asp Thr Leu Ala His Leu Leu Tyr Tyr Pro Gln Lys Pro Leu Val

770					775					780					
Cys 785	Thr	Lys	Val	Met	Glu 790	Tyr	Leu	Arg	Phe	Arg 795	Glu	Leu	Pro	Ala	Gly 800
Ile	Asn	Ala	Ile	Val 805	Ala	Ile	Met	Cys	Tyr 810	Thr	Gly	Tyr	Asn	Gln 815	Glu
Asp	Ser	Leu	Ile 820	Met	Asn	Gln	Ser	Ser 825	Ile	Asp	Arg	Gly	Leu 830	Phe	Arg
Ser	Val	Phe 835	Tyr	Arg	Thr	Tyr	Thr 840	Ser	Glu	Glu	Lys	Gln 845	Gln	Gly	Ser
Leu	Ile 850	Ile	Glu	Ser	Phe	Glu 855	Lys	Pro	Ser	Val	Arg 860	Val	Val	Lys	Asn
Leu 865	Lys	Arg	Gly	Asp	Tyr 870	Thr	Lys	Leu	Asp	Asp 875	Asp	Gly	Leu	Ile	Ala 880
Pro	Gly	Ile	Arg	Val 885	Leu	Gly	Asp	Asp	Ile 890	Ile	Ile	Gly	Lys	Val 895	Ser
Pro	Asn	Ile	Asp 900	Asp	Glu	Asp	Asp	Ile 905	Ile	Ile	Glu	Lys	Arg 910	Asn	Thr
Ser	Ser	Ser 915	Ser	Ile	Gln	Ile	Tyr 920	Asn	Lys	Asp	Ser	Ile 925	Ser	Asn	Asn
Asn 930	Ser	Asn	Asn	Ser	Asn	Asn 935	Asn	Met	Asn	Asn	Met 940	Ser	Asn	Met	Ser
Asn 945	Met	Ser	Asn	Ile	Arg 950	Ser	Ser	Ile	Ser	Ser 955	Asn	Leu	Ser	Phe	Ser 960
Ser	Asn	Ile	Gly	Ser 965	Ser	Asn	Val	Leu	Asp 970	Thr	Leu	Pro	Asp	Ser 975	Pro
Ile	Asn	Asn	Thr 980	Tyr	Asn	Asn	Asn 985	Asn	Asn	Ile	Asn	Ile	Asn 990	Ser	Ser
Ser	Asn	Asn 995	Tyr	Ser	Leu	His 1000	Gly	Ala	Ala	Ser	Val 1005	Thr	Ser	Ser	Thr
Pro 1010	Ser	Ser	Thr	Thr	Ile	Phe 1015	Ser	Ser	Gly	Gln	Thr 1020	Ala	Gly	Ser	Ser
Asn 1025	Ser	Asn	Thr	Lys	Tyr 1030	Gly	Thr	Thr	Ile	Val 1035	Ser	Ser	Thr	Lys	Asp 1040
Asp	Thr	Glu	Ile	Pro 1045	Thr	Leu	Thr	Ile	Ser 1050	Ser	Thr	Asn	Val 1055	Leu	Lys
Gln	Tyr	Lys	Lys	Asp	Cys	Ser	Leu 1065	Ser	Leu	Arg	Ser	Asn 1070	Glu	Asn	Gly
Val	Ile	Asp 1075	Thr	Val	Met	Leu	Ser 1080	Ser	Asn	Ser	Arg	Gly 1085	Asn	Lys	Phe
Ala 1090	Lys	Val	Lys	Val	Arg	Ser 1095	Val	Arg	Ile	Pro	Gln 1100	Ile	Gly	Asp	Lys
Phe 1105	Ala	Ser	Arg	His	Gly 1110	Gln	Lys	Gly	Thr	Ile 1115	Gly	Ile	Thr	Tyr	Arg 1120
Thr	Glu	Asp	Met 1125	Pro	Phe	Ser	Ser	Leu	Gly 1130	Ile	Phe	Pro	Asp	Ile 1135	Ile
Met	Asn	Pro	His 1140	Ala	Val	Pro	Ser	Arg 1145	Met	Thr	Ile	Gly	His 1150	Leu	Val

Glu Cys Leu Thr Gly Lys Val Ala Ala Ile Glu Gly Gly Glu Gly Asp
 1155 1160 1165
 Ala Thr Pro Phe Ser Lys Ile Thr Val Gln Glu Ile Ser Gln Lys Leu
 1170 1175 1180
 His Asn Leu Gly Tyr Glu Lys Tyr Gly Asn Glu Met Leu Tyr Asn Gly
 1185 1190 1195 1200
 His Asn Gly Arg Met Leu Lys Ser Lys Ile Phe Ile Gly Pro Thr Tyr
 1205 1210 1215
 Tyr Gln Arg Leu Lys His Met Val Glu Asp Lys Ile His Ala Arg Ser
 1220 1225 1230
 Arg Gly Pro Leu Thr Met Ile Thr Arg Gln Pro Thr Glu Gly Arg Ser
 1235 1240 1245
 Arg Asp Gly Gly Leu Arg Phe Gly Glu Met Glu Arg Asp Cys Met Ile
 1250 1255 1260
 Ser His Gly Ser Ala Lys Met Leu Lys Glu Arg Leu Phe Glu Glu Ser
 1265 1270 1275 1280
 Asp Ala Tyr Arg Val His Val Cys Asp Asn Cys Gly Leu Cys Cys Ile
 1285 1290 1295
 Ala Asp Ile Asn Lys Asn Ala Tyr Glu Cys Thr Val Cys Asn Ser Lys
 1300 1305 1310
 Thr Asn Ile Ser Gln Ile Tyr Leu Pro Tyr Ala Cys Lys Leu Leu Phe
 1315 1320 1325
 Gln Glu Leu Met Thr Met Ala Ile Tyr Pro Lys Leu Val Leu Glu Asp
 1330 1335 1340
 Val
 1345

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 <211> 899
 <212> PRT
 <213> Plasmodium falciparum

<400> 143
 Met Tyr Lys Ile Lys Asn Asn Glu Ser Asp Ile Asn Ser Asp Asp Cys
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 35 40 45
 Ser Ser Asn Asn Ile Tyr Glu Lys Lys Thr Cys Ser Asn Thr Ser Ala
 50 55 60
 Ser Ser Val Lys Lys Tyr Asp Lys Lys Glu Gln Ser Leu Cys Ser Asp
 65 70 75 80
 Ile Asn Asn Tyr Asn Lys Val Asn Ile Glu Gly Leu Lys Ile Asn Glu
 85 90 95
 Arg Asn Tyr Asp Arg Ile Asn Asn Ser Glu Glu Glu Thr Asn Ile Asn
 100 105 110
 Asp Asp Asn Asn Asp Asp Asn Asn Gly Asp Tyr Asp Asp Asp Asn Asn
 115 120 125

Ser Asp Asp Asp Asp Asp Asn Asp Asp Asn Asn Asn Asn Asp Asp Asn
 130 135 140
 Asn Asn Asp Asp Asp Glu Asp Val Asp Asp Phe Glu Asp Ile Lys Glu
 145 150 155 160
 Asn Asp Glu Tyr Lys Asp Pro Thr Tyr Ser Asp Ile Tyr Lys Glu Ala
 165 170 175
 Lys Lys Cys Asn Ile Arg Cys Glu Asn Ile Met Asn Ser Ser Val Asn
 180 185 190
 Lys Lys Asn Leu Glu Glu Ile Asn Glu Ser Asp Pro Leu Asn Ser Ser
 195 200 205
 Asp Asn Ser Met Thr Ser Ser Ser Glu Glu Ser Cys Ser Glu Glu Ser
 210 215 220
 Asp Lys Glu Ser Asp Lys Glu Ser Asp Lys Asp Gly Asn Leu Tyr Asp
 225 230 235 240
 Glu Glu Leu Asn Glu Ile Ile Glu Glu Gly Tyr Phe Lys Glu Leu Ile
 245 250 255
 Pro Ala Ile Pro His Asp Ile Leu Gln Ala Tyr Ile Ser Cys Leu Lys
 260 265 270
 Ile Cys Gly Phe Glu Arg Gln Val Gln Leu His Arg Leu Ile Asn Leu
 275 280 285
 Leu Gly Asp Leu Arg Asp Pro Ile Ser Val Ile Gln Ile Leu Gly Leu
 290 295 300
 Pro Gly Met Gly Lys Thr Lys Val Val Lys Asn Phe Ile Lys Leu Thr
 305 310 315 320
 Asn Val Pro Phe Ala Tyr Val Asn Cys Leu Met Ala Val Tyr Gln Ser
 325 330 335
 Gly Arg Ser Ala Lys Asn Val Ile Tyr His Thr Ile Leu Lys Asp Leu
 340 345 350
 Ser Ile Asn Leu Leu Asn Glu Phe Asn Glu Tyr Lys Lys Ile Asn Asn
 355 360 365
 Ile Thr Asn Tyr Ser Tyr Asp Pro Thr Lys Leu Val Pro Asn His Val
 370 375 380
 Ser Asn Thr Asp Asn Phe Phe Ser Ile Leu His Lys Leu Leu Ser Phe
 385 390 395 400
 Lys Pro Glu Asp Ile Leu Asn Asn Lys Arg Thr Thr Glu Asn Ile Arg
 405 410 415
 Ser Pro Ser Asn Ser Asn Asn Asn Lys Lys Lys Lys Lys Glu Gln Asn
 420 425 430
 Asp Ser Thr Gly Lys Asn Ser Lys Glu Glu Cys Asn Asn Asn Glu Asp
 435 440 445
 Asp Asp Asp Asp Asn Asn Lys Asn Asn Phe Asn Asn Asn Asn Ser Asn
 450 455 460
 Asn Val Arg Phe Asn Ser Asn Thr Asn Tyr Tyr Lys Asp Lys Leu Tyr
 465 470 475 480
 Asp Arg Ser Val Val Phe Ile Leu Asp Asn Ile Arg Tyr Leu Val Arg
 485 490 495

Thr His Pro Asp Leu Phe Tyr Ala Leu Thr Arg Ile His Glu Tyr Ile
 500 505 510
 Lys Gly Pro Tyr Asn Asp Val Thr Lys Ala Asn Lys Thr Thr Arg Gly
 515 520 525
 Leu Cys Ile Ile Leu Ile Asn Arg Ser Pro Leu Pro Asp Glu Ile Phe
 530 535 540
 Asp Gly Leu Pro Gln Pro Pro Thr Val Trp Phe Asp Ser Tyr Thr Ser
 545 550 555 560
 Glu Met Cys Lys Asn Ile Leu Tyr Arg Leu Tyr Asn Ser Met Cys Phe
 565 570 575
 Glu Ser Leu Leu Thr Tyr Asn Asp Lys Asp Leu Lys Ile Tyr Tyr Val
 580 585 590
 Lys His Asn Lys Asn Glu Phe Leu Ile Lys Arg Asn Asp Val Ile Leu
 595 600 605
 Glu Asn Asp Val Ile Tyr Asp Ile Trp Cys Arg Tyr Val Asp Tyr Ile
 610 615 620
 Ile Asn Val Ser Tyr Lys Asp Tyr Lys Ser Asp Phe His Glu Leu Leu
 625 630 635 640
 Phe Ile Cys Ser His Met Trp Pro Leu Phe Ile Lys Pro Ile Leu Asp
 645 650 655
 Gly Val Leu Glu Pro Ile Val Glu Asn Met Asn Ala Leu Gln Arg Asn
 660 665 670
 Ile Asp Thr His Ile Arg Val Ala Thr Tyr Asn His Ser Ser His Phe
 675 680 685
 Thr Phe Glu Leu Ile Asp Ser Val Phe Leu Asn Glu Asn Asn Leu Lys
 690 695 700
 Asn Lys Ile Asp Leu Ser Phe Tyr Ser Lys Ile Leu Leu Val Gly Ala
 705 710 715 720
 Tyr Leu Ala Ser Arg Asn Leu Pro Leu Thr Asp Lys Arg Phe Phe Asn
 725 730 735
 Ala Thr Val Lys Gly Gly Ala Phe Thr Leu Pro Lys Lys Arg Lys Gly
 740 745 750
 Lys Asn Lys Asn Glu Ser Ile Leu Thr Leu Leu Ser Lys Ser Ile Pro
 755 760 765
 Lys Asn Phe Thr Phe Ile Arg Trp Leu Cys Leu Thr Asp Cys Leu Leu
 770 775 780
 Val Cys Phe Phe Asp Glu Gln Leu Ile Leu Asn Ser Leu Ile Cys Gln
 785 790 795 800
 Gln Ile Asn Thr Leu Ile Gln Leu Gly Phe Ile Ser Phe Ser Ser Pro
 805 810 815
 Asn Asn Leu Ser Cys Leu Val Arg Asn Ser Leu Met Asn Gly Val Gln
 820 825 830
 Trp Ser Gly Tyr Cys Gly Ser Ala Leu Leu Asn Thr Thr Thr Asn Phe
 835 840 845
 Ser Ser Leu Thr Asn Asn Ile Phe Cys Glu Thr Asn Asn Ser Met Thr
 850 855 860
 Tyr Glu Ser Leu Asp Pro Tyr Thr Lys Leu Val Ile Gln Val Pro Glu

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1				5					10					15		
Pro	Lys	Glu	Tyr	Lys	Thr	Gln	Asp	Met	Ile	Glu	Gly	Glu	Lys	Glu	Arg	
			20					25					30			
Lys	Asn	Lys	Ile	Ile	Lys	Glu	Tyr	Ile	Lys	Asn	Met	Asn	Glu	Glu	Asp	
		35					40					45				
Phe	Leu	Tyr	Leu	Ser	Glu	His	Leu	Lys	Ile	Arg	Ile	Asp	Asn	Glu	Ile	
	50					55					60					
Phe	Met	Ser	Gln	Glu	Leu	Asn	Asp	Tyr	Ile	Asn	Lys	His	Ile	Asp	Ile	
	65				70					75					80	
Ile	Cys	Glu	Leu	His	Phe	Lys	Asn	Phe	Lys	Arg	Pro	Lys	Thr	His	Met	
				85					90					95		
Lys	Lys	Val	Phe	Ile	Asp	Leu	Thr	Leu	Lys	Leu	Lys	Tyr	Leu	Arg	His	
			100					105					110			
Leu	Glu	Tyr	Leu	Lys	Arg	Lys	Lys	Lys	Lys	Asp	Lys	Glu	Asn	Lys	Ser	
		115					120					125				
Lys	Ser	Lys	Lys	Glu	Lys	Asn	Asn	Lys	Asn	Glu	Lys	Asp	Asp	Glu	Met	
	130					135					140					

Glu Asn Lys Lys Glu Lys Asn Asn Lys Asn Glu Lys Asp Asp Glu Met
 145 150 155 160
 Glu Asn Lys Lys Glu Lys Asn Asn Lys Asn Glu Lys Asp Asp Glu Met
 165 170 175
 Glu Asn Lys Lys Glu Lys Asn Asn Lys Asn Glu Lys Asp Asp Glu Met
 180 185 190
 Glu Asn Lys Lys Glu Lys Asn Asn Lys Asn Glu Lys Asp Asp Glu Met
 195 200 205
 Glu Asn Lys Lys Glu Lys Asn Asn Lys Asn Glu Lys Asp Asp Glu Met
 210 215 220
 Glu Asn Lys Lys Glu Lys Asn Asn Lys Asn Glu Lys Asp Asp Glu Ile
 225 230 235 240
 Lys Glu Asn Met Asp Lys Val Met Glu Asn Gln Leu Asn Gln Ser Asn
 245 250 255
 Ile Leu Tyr Asn Lys Asp Arg Ile Arg Lys Asn Arg Asn Asn Leu Lys
 260 265 270
 Asp Glu Lys Asp Val Ser Asn Lys Asn Ile Leu Asp Asp Asn Lys Asp
 275 280 285
 Ile Val Glu Phe Lys Leu Gln Asp Ile Ser Ser Gly Tyr Ser Glu Thr
 290 295 300
 Ser Cys Lys Ser Thr Asn Ser Ile Glu Asn Gly Asn Ser Ser Ser Thr
 305 310 315 320
 Ser Ser Cys Asp Asp Asp Ser Ser Phe Leu Phe Ser Cys Ser Ser Asp
 325 330 335
 Cys Asp Glu Glu Thr Ser Asp Glu Glu Ile Leu Ser Thr Ile His Phe
 340 345 350
 Asp Glu Lys Glu Met Ser Thr Leu Lys Ser Leu Glu Lys Ala Lys Asn
 355 360 365
 Val Tyr Phe Ala Tyr Ile Asn Lys Lys Phe Lys Lys Tyr Asn Ile Leu
 370 375 380
 Asp His Phe Asn Met Asn Phe Leu Glu Arg Leu Asn Tyr Tyr Phe Ser
 385 390 395 400
 Lys Leu Tyr Tyr Gln Asn Asn Asn Leu Lys Gln Thr Asn Glu Tyr Gln
 405 410 415
 Asn Arg Ile Lys Glu Phe Leu Ser Asn Glu Glu Asn Val Lys Lys Ile
 420 425 430
 Glu Leu Asn Gln Ser Lys Leu Arg Ser Asp Ile Leu Asn Ser Met Phe
 435 440 445
 Gly Phe His Ile Ile Asn Glu Thr His Pro Met Lys Leu Pro Ile Lys
 450 455 460
 Asn Met Asn Asn Leu Ser Tyr Gln Asn Thr Lys Val Asp Asn Ile Tyr
 465 470 475 480
 Ala Tyr Lys Ser Asn Thr Asn Lys Cys Arg Val His Thr Lys Leu Asn
 485 490 495
 Gln Leu Tyr Glu Thr Asn Asp Asn Ile Arg Asn Met Asn Tyr Tyr Lys
 500 505 510
 Thr Ile Glu Tyr Met Asn Ser Glu Asn Asn Ile Asn Asn Met Asn Ile

515					520					525					
Leu	Asn	Glu	Trp	Thr	Asn	Phe	Met	Asp	Gln	Asn	Ile	Asn	Ile	Glu	Ser
530						535					540				
Ile	Ser	Pro	Glu	Gln	His	Lys	Lys	Gly	Asn	Arg	Lys	Lys	Lys	Ile	Asn
545					550					555					560
Thr	Lys	Lys	Leu	Tyr	His	His	Asp	Asn	Tyr	Asn	Asn	Asn	Asn	Asn	Asn
				565					570					575	
Asn	Asn	Asn	Asp	Asn	Asn	Asn	Asp	Asn	Asn	Asp	Asn	Asn	Asn	Asn	Asp
			580					585					590		
Asn	Asn	Asn	Asp	Asn	Asn	Asn	Asp	Asn	Asn	Asn	Ile	Asn	Cys	Ile	
			595				600				605				
Tyr	Gly	Glu	His	His	Asn	Val	Lys	His	Lys	Lys	Arg	Lys	Ser	Thr	Ser
610					615					620					
Lys	Ser	Lys	His	Ile	Phe	Arg	Ser	Asn	Glu	Val	Ser	Ile	His	Phe	Asn
625					630					635					640
Asp	Asp	Ile	Lys	Lys	Ile	Glu	His	Val	Ala	Lys	Lys	Glu	Leu	Gln	Glu
				645					650					655	
Tyr	Ile	Lys	Gln	Ile	His	Asn	Lys	Ser	Lys	Ile	His	Asn	Asn	Ile	Ser
			660					665					670		
Ser	Leu	Lys	Gln	Tyr	Met	Leu	Ile	Ser	Asn	Trp	Lys	Glu	Leu	Thr	Lys
			675				680					685			
His	Asn	Asn	Tyr	Met	Thr	Leu	Leu	Ser	Glu	Glu	Lys	Lys	Arg	Asn	Ser
			690			695					700				
Lys	Ile	Leu	Ala	Asn	Leu	Cys	Tyr	Asn	Gln	Met	Lys	Ala	Ile	Asp	Gln
705					710					715					720
Lys	Arg	Lys	Ile	Ile	Leu	Glu	Lys	Glu	Glu	Arg	Glu	Arg	Met	Lys	Leu
				725					730					735	
Leu	Lys	Asp	Asn	Asp	Ile	Glu	Ala	Tyr	Met	Lys	Leu	Ile	Lys	Thr	Ala
			740					745					750		
Lys	Asn	Lys	Arg	Leu	Gln	Glu	Leu	Leu	Asp	Val	Thr	Glu	Gln	Phe	Leu
			755				760					765			
Asn	Asn	Met	Ser	Lys	Cys	Val	Leu	Tyr	Gln	Lys	Lys	Glu	Ala	Tyr	Gln
			770			775					780				
Glu	Ser	Ser	Glu	Gln	Asn	Phe	His	Gly	Leu	Ile	Asn	His	Lys	Asn	Glu
785					790					795					800
Asp	Asn	Glu	Lys	Cys	His	Lys	Asn	Tyr	Asn	Ser	Lys	Asp	Asn	Asn	Asn
				805					810				815		
Ile	Leu	Gln	Ser	Val	His	Asn	Leu	Thr	Thr	His	Gly	Gln	Gln	Asn	Gly
			820					825					830		
Tyr	Asn	Asn	Lys	Lys	Gly	Tyr	Asp	Thr	Met	Tyr	Glu	His	Asn	Glu	Asn
			835				840					845			
Asn	Thr	Lys	Ile	Cys	Asn	Tyr	Lys	Asn	Ala	Arg	Glu	Asn	Tyr	Tyr	Asn
			850			855					860				
Ile	Ser	His	Val	Val	Lys	Glu	Lys	Val	Lys	Gln	Pro	Ser	Ile	Leu	Ile
865					870					875					880
Gly	Gly	Glu	Leu	Met	Lys	Tyr	Gln	Leu	Glu	Gly	Leu	Glu	Trp	Leu	Val
				885					890					895	

Ser Leu Tyr Asn Asn Asn Leu His Gly Ile Leu Ala Asp Glu Met Gly
 900 905 910
 Leu Gly Lys Thr Ile Gln Thr Ile Ser Leu Phe Ala Tyr Leu Lys Glu
 915 920 925
 Phe Lys Asn Asn Ile Asn Val Lys Asn Leu Ile Ile Val Pro Leu Ser
 930 935 940
 Thr Leu Pro Asn Trp Ile Ser Glu Phe Asn Arg Trp Cys Pro Ser Leu
 945 950 955 960
 Asn Val Ile Thr Tyr Arg Gly Asn Lys Leu Glu Arg Lys His Ile Ala
 965 970 975
 Lys Lys Leu Leu Glu Gln Thr Phe Asp Ile Cys Ile Thr Thr Phe Asp
 980 985 990
 Leu Val Ile Lys Glu Lys Ser Phe Leu Met Lys Ile Ser Trp Asn Tyr
 995 1000 1005
 Ile Val Val Asp Glu Gly His Arg Met Lys Asn Asn Lys Ser Arg Phe
 1010 1015 1020
 His Val Phe Leu Ser Glu Phe Lys Ser Lys Tyr Arg Ile Leu Leu Thr
 1025 1030 1035 1040
 Gly Thr Pro Leu Gln Asn Asn Leu Ser Glu Leu Trp Ser Leu Leu Asn
 1045 1050 1055
 Phe Leu Leu Pro Lys Ile Phe Ser Ser Cys Val Asp Phe Glu Lys Trp
 1060 1065 1070
 Phe Val Lys Ser Leu His Asn Glu Lys Asp Val Tyr Glu His Ile Thr
 1075 1080 1085
 Glu Glu Glu Gln Leu Leu Ile Ile Asn Arg Leu His Ser Val Leu Leu
 1090 1095 1100
 Pro Phe Met Leu Arg Arg Val Lys Lys Asp Val Leu Lys Ser Leu Pro
 1105 1110 1115 1120
 Lys Lys Tyr Glu Tyr Asn Ile His Ile Glu Leu Ser Leu Tyr Gln Lys
 1125 1130 1135
 Ile Leu Tyr Lys Gln Ile Gln Thr Lys Gly Phe Lys Gln Val Asn His
 1140 1145 1150
 Asn Gly Ser Ile Thr Thr Lys Ile Phe Gln Asn Ile Val Met Gln Leu
 1155 1160 1165
 Arg Lys Ile Val Asn His Pro Tyr Leu Phe Leu Tyr Asp Tyr Asn Ile
 1170 1175 1180
 Asp Glu Asn Ile Ile Lys Cys Ser Gly Lys Phe Glu Val Leu Asp Arg
 1185 1190 1195 1200
 Met Leu Pro Lys Leu Leu Lys Phe Lys His Lys Val Leu Ile Phe Ser
 1205 1210 1215
 Gln Met Thr Lys Leu Met Asn Ile Leu Cys Asp Tyr Leu Glu Phe Arg
 1220 1225 1230
 Gly Tyr Lys Tyr His Arg Leu Asp Gly Asn Ile Gly Leu Gln Glu Arg
 1235 1240 1245
 Lys Lys Ile Ile Asp Gln Phe Asn Asn Asn Val Glu Tyr Lys Lys Asp
 1250 1255 1260

Glu Gly Lys Gln Pro Asn Cys Glu Met Pro Gly Asn Glu Asn Met Asn
 1265 1270 1275 1280
 Met Ser Gly Asn Glu Asn Met Asn Met Ser Val Asn Glu Asn Met Asn
 1285 1290 1295
 Met Ser Val Asn Glu Asn Met Asn Met Ser Gly Asn Glu Asn Met Asn
 1300 1305 1310
 Met Ser Gly Asn Glu Asn Met Asn Met Ser Gly Asn Glu Asn Met Asn
 1315 1320 1325
 Met Ser Gly Asn Glu Asn Met Asn Met Ser Gly Asn Glu Asn Met Asn
 1330 1335 1340
 Met Ser Gly Asn Glu Asn Met Asn Met Ser Gly Asn Glu Asn Ile Lys
 1345 1350 1355 1360
 Met Ile Ser Ser Gln Asn Glu Lys Asp Thr Ser Ser Gln Ser Val Lys
 1365 1370 1375
 Ile Ser Glu Leu Lys Lys Glu Glu Ile Asn Asp Phe Gln Ile Met Asp
 1380 1385 1390
 Asp Lys Asn Val Asn Gly Gly Asn Gln Asp Ala Met Ile Phe Ile Leu
 1395 1400 1405
 Ser Thr Arg Ser Gly Ser Leu Gly Leu Asn Leu Gln Thr Ala Asp Thr
 1410 1415 1420
 Val Ile Ile Phe Asp Ser Asp Phe Asn Pro His Gln Asp Ile Gln Ala
 1425 1430 1435 1440
 Met Cys Arg Cys His Arg Ile Gly Gln Lys Asn Val Val Lys Val Phe
 1445 1450 1455
 Arg Phe Ile Thr Leu Ser Gly Val Glu Glu Leu Val Phe Lys Lys Ala
 1460 1465 1470
 Gln His Lys Leu Ser Ile Asn Asp Lys Val Ile Gln Ala Gly Leu Phe
 1475 1480 1485
 Asn Lys Ile Tyr Asn Asp Glu Asp Arg Gln Asn Lys Leu Lys Asp Ile
 1490 1495 1500
 Ile Gln Arg Asn Gln Lys Asn Asp Met Thr Thr His Pro Thr Asn Pro
 1505 1510 1515 1520
 Leu Leu Leu Asn Tyr Tyr Met Lys Arg Asn Glu Glu Glu Leu Glu Tyr
 1525 1530 1535
 Phe Leu Asp Phe Asp Lys Arg Tyr Phe Gly Glu Gln Tyr Phe Ser Leu
 1540 1545 1550
 Leu Asn Thr Leu Asn Val Glu Asn Val Asp Ser Gly Gln Phe Thr Tyr
 1555 1560 1565
 Met Ser Glu Asp Glu Lys Glu Glu Asn Glu Thr Tyr Leu Ser Ser Ile
 1570 1575 1580
 Ile Lys Lys Glu Lys Lys Glu Glu Glu Gly Glu Asp Asp Glu Glu Asn
 1585 1590 1595 1600
 Gln Arg Asp Arg Asn Lys Glu Glu Asp Gln Asp Glu Asp Lys Asp Asp
 1605 1610 1615
 Asp Lys Asp Lys Asp Lys Asp Lys Asp Lys Glu Glu Glu Glu Glu Lys
 1620 1625 1630
 Lys Arg Lys His Ile Leu Asn Asn Asn Asn Asn Asn Gly Ile Gln Asn

1635	1640	1645
Gly Ser Ser Ile Asn Glu Gly Val Lys Glu Lys Ile Leu Asp Glu Tyr 1650 1655 1660		
Cys Asn Asn Asn Thr Lys Cys Val Lys Val Ser Asn Glu Arg Leu Ile 1665 1670 1675 1680		
Phe Lys Arg Lys His Asp Thr Asp Asp Leu Gln Cys Glu Asp Glu Lys 1685 1690 1695		
Ile Lys Glu Asn Glu Glu Cys Asp Val Asp Asn Ile Ile Gln Asn Lys 1700 1705 1710		
Asn Asn Lys Arg Leu Lys Met Glu Cys Gln Lys Asp Asp Lys Asp Asp 1715 1720 1725		
Asp Ile Asn Ser Asn Ile His Met Asp Glu Lys Lys Lys Ile Tyr Met 1730 1735 1740		
Ser Ser Glu Lys Asp Asp Thr Thr Lys Glu Tyr Ser Asp Thr His Asp 1745 1750 1755 1760		
Pro Tyr Ile Asn Asp Lys Met Gln Val Lys Asp Glu Glu Asp Tyr Tyr 1765 1770 1775		
Gly Phe Ile Leu Lys Glu Glu Asn Gln Asn Asp Ile Glu Lys Ile Leu 1780 1785 1790		
Ile Lys Ser Asn Lys Leu Ile Asn Lys Asp Glu Leu Pro Ala Tyr Leu 1795 1800 1805		
Phe Tyr Asp Asp Thr Asn Asp Ser Pro Asp Lys Ile Asn Leu Lys Arg 1810 1815 1820		
Ser Arg Lys Val Ile Asn Ile Asn Leu Met Gln Glu Glu Lys Leu Thr 1825 1830 1835 1840		
Glu Lys Gln Phe Leu Lys Leu Ile Asp Ser Ser Ser Pro Asn Leu Leu 1845 1850 1855		
Ser Ser Val Glu Lys Asp Leu Gly Arg Asn Lys Lys Asp Ile Val Lys 1860 1865 1870		
Ser Asp Met Glu His Asn Asn Asp Ile Thr Thr Leu Glu Glu Val Lys 1875 1880 1885		
Asp Arg Glu Glu Ile Lys Glu Glu His Leu Glu Thr Thr Lys Asn Ile 1890 1895 1900		
Ser Ser Leu Asn Ile Asn Asp Leu Glu Ile Asn Lys Thr Leu Thr Asn 1905 1910 1915 1920		
Glu Asn Val His Ser Thr Lys Lys Ser Pro Tyr Asn Met Arg Ser Ser 1925 1930 1935		
Lys Arg Arg Ser Asp Thr Ser Ser Thr Tyr Met Glu Thr Ser Ile Lys 1940 1945 1950		
Lys Arg Asn Asp Lys Asp Ile His Ile Cys Leu Lys Lys Gly Lys Lys 1955 1960 1965		
Arg Asn Asn Ser Met Glu His Thr Lys Gln Glu Cys His Val Asp Asp 1970 1975 1980		
Glu Asn Lys Lys Arg Val Lys Lys Arg Lys Ser Ser Gln 1985 1990 1995		

<211> 1182

<212> PRT

<213> Plasmodium falciparum

<400> 146

Met Asp Ile Gln Arg Lys Ile Lys Lys Cys Ile Thr Leu Lys Arg Lys
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Leu Lys Asn Pro Lys Gly Cys Leu Thr Asn Leu Lys Asn Lys Ile Ile
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Lys Cys Asn Val Lys Asp Phe Gln Ser Thr Arg Asn Arg Tyr Phe Phe
 35 40 45

Asn Ile Phe Glu Lys Ile Ile Lys Arg Tyr Ile Phe Asn Asn Val Met
 50 55 60

Asn Thr Asn Arg Thr Asn Asn Phe Gly Ile Glu Asn Ile Ser Cys Thr
 65 70 75 80

Gln Tyr Asp Lys Ile Lys Asn Ile Pro Tyr Thr Cys His Asn Ile Lys
 85 90 95

Tyr Asp Ile His Ser Cys Asn Asn Lys His Ile Tyr Asp Asn Asn Ser
 100 105 110

Tyr Asn Ile Ile Lys Lys Asn Asn Met Asp Leu Ser Ser Phe Leu Lys
 115 120 125

Asn Ile Ile Phe Asn Ile Asn Tyr Leu Leu Tyr Leu Phe Asn Lys Asn
 130 135 140

Asn Arg Ile Tyr Phe Asp Leu His Val Leu Phe Lys Asn Asp Leu Leu
 145 150 155 160

Leu Gln Arg Asn Ile Asn Ile Ser Tyr Glu Ser Asn Ile Asp Asn Met
 165 170 175

Ser Arg Glu Gly Val His His Lys Arg Asp Ile Leu Ile Asn Thr Gln
 180 185 190

Cys Leu Tyr Asn Ile Asn Asp Leu Phe Ala Leu Phe Ile Phe Tyr Val
 195 200 205

His Ile Lys Arg Phe Tyr Phe Asp Phe Phe Phe Thr Ile Leu Lys Asn
 210 215 220

Ile Asn Asp Met Glu Ser Thr Asn Asp Tyr Lys Asn Val Cys Tyr Met
 225 230 235 240

Asn Asn Ile His Lys Glu His Ile Tyr His Ile Phe Pro His Lys Asn
 245 250 255

Tyr Tyr Asn Ile Gln Asn Met Asn Ser Glu Tyr Cys Leu Lys Phe Leu
 260 265 270

Lys Ala Cys Ile Gln Leu Lys Asn Ile Ile Ser Asn Ile Val Asn Ile
 275 280 285

Asn Lys Lys Lys Lys Glu Lys Asn Val Thr Asn His Gln Asn Asn Ile
 290 295 300

Arg Thr Cys Arg Ile Asn Tyr Phe Val Phe Ile Lys Asn Ala Ile Phe
 305 310 315 320

Lys Lys Cys Lys Ile Ile Lys Lys Lys Glu Lys Lys Lys Lys Lys Asn
 325 330 335

Asp Glu Gln Ile Tyr Ile Lys Ala Tyr Ile His Asn Ser Val Tyr Thr
 340 345 350

Asn Ile Phe Lys Asp Met Leu Leu His Asn Ile Lys Ile Glu Arg Lys
 355 360 365
 Lys Lys Lys Ile Asn Asn Asn Asn Lys Ile Ile Asn Asn Lys Ile Ile
 370 375 380
 Asn Lys Asn Ile Ile Glu Leu Phe Asn Asn Asn Ile Ile Arg Lys Lys
 385 390 395 400
 Tyr Ile His Phe Phe Phe Leu Lys Lys Gln Lys Tyr Lys Asn Met Thr
 405 410 415
 Tyr His Lys Phe Lys Lys Arg Lys Asp Met Asn Thr Leu Ile Met Cys
 420 425 430
 Asp Lys Tyr Ile Asn Lys Ser Ile Cys Leu Phe Leu Asn Asn Phe Gln
 435 440 445
 Asp Ser Ser Ile Phe Ile Lys Tyr Met Lys Ile Ile Lys Lys Ala Asn
 450 455 460
 Ile Ile Asn Tyr Leu Tyr Asp Asp His Val Phe Ile Lys Ser Leu Met
 465 470 475 480
 Lys Cys Val Lys Lys Asn Cys Ala Tyr Phe Thr Gly Gln Asp Leu Ile
 485 490 495
 Phe Ile Tyr Lys Trp Lys Thr His Met Asn Asn Leu Asp Asn Ile Asn
 500 505 510
 Gln His Asn Asn Lys Tyr Lys Asn Lys His Asn Asn Asn Met Tyr Ile
 515 520 525
 Lys Thr Asp Lys Val Lys Asp Asn Asn Val Leu Phe Pro Phe Ser Leu
 530 535 540
 Ile Lys Asp Asp Ile Phe Arg His Ile Glu Asp Tyr His Phe His His
 545 550 555 560
 Ile Lys Asp Ile Ile Tyr Ile Cys Tyr Lys Asn Lys Leu Tyr Glu Tyr
 565 570 575
 Lys Leu Phe His Lys Ile Ile Asn His Leu Ile Asn Asn Ile Asn Lys
 580 585 590
 Ile Cys Ser Lys Tyr Leu Val Thr Ile Ile Ile Leu Leu Tyr Asn Lys
 595 600 605
 Leu Asn Cys Lys Thr Gln Leu Lys Glu Leu Leu Phe Ile Leu Leu Asn
 610 615 620
 Asn Tyr Arg Pro Ser Leu Lys Gln Arg Asn Lys Arg Asn Asn Ile Ser
 625 630 635 640
 Ile Asn Asn Ile Tyr Leu Lys Asn Ile Asn Lys Lys Tyr Ile Lys Lys
 645 650 655
 Lys Lys Lys Lys Lys Lys Tyr Ile Tyr Ile Tyr Thr Ile Cys Lys Lys
 660 665 670
 Lys Asn Asn Val Gly Asn Ile His Lys His Asn Val Met Met Thr Ser
 675 680 685
 Asn His Asn Asn Ile Leu Phe Arg Ser Phe Glu Tyr Val Lys Val His
 690 695 700
 Lys Leu Leu Leu Phe Ile Asn Ile Leu Ile Lys Ser Asn Ile Tyr Ile
 705 710 715 720

Asn Tyr Glu Trp Ser Leu Tyr Phe Leu Ser Leu Ile Lys Gln Lys His
 725 730 735
 Ala Phe Ile Lys Lys Lys Gly Phe Tyr Ile Leu Cys Tyr Ile Leu Phe
 740 745 750
 His Ile Gln Asn Asn His Ile Ile Tyr Lys Ser Tyr Glu His Ile Phe
 755 760 765
 Asn Pro Tyr Asn Lys Tyr Asn Ile Tyr Asn Ile Tyr Asn Ile Ile Lys
 770 775 780
 Cys Thr Leu Pro Gln Ile Leu Gly Thr Ser Asn Ile Tyr Ser Leu Ile
 785 790 795 800
 Tyr Val Ala Phe Leu Tyr Ser Thr Asn Asn Thr Ile Asn Phe Ile Lys
 805 810 815
 Ile Phe Phe Thr Ile Ile Gln Lys Phe Tyr Asp Ser Ser Met Ile Lys
 820 825 830
 Gln Ile Gln Asn Asp Lys Asn Asn Tyr Gln His Ile Ser Cys His Asn
 835 840 845
 Tyr Ser Pro Lys Lys Asp Asn Ser Glu Tyr Tyr Ile Pro Asp Asp His
 850 855 860
 Asn Lys Leu Leu Tyr Asn Tyr Ser Tyr Asn Gln Leu Tyr Glu Lys Asn
 865 870 875 880
 His Phe Asn Asp Asp Asn Ile Phe Ile His Asp Leu Lys Ile Tyr Glu
 885 890 895
 Arg Asn Ile Asn Asn Lys Tyr Gln Lys Ile Lys Asp Lys Lys Lys Ile
 900 905 910
 Tyr Ala Phe Lys Asn Lys Ile Asn Leu Ile Asn Ile Pro Leu Ile Cys
 915 920 925
 Asn Asn Val Lys Glu His Phe Ser Phe Asn Pro Tyr Val Asn Asn Ile
 930 935 940
 Lys Tyr Gln Thr Arg Thr Pro Glu Asn Ile Ser Lys Leu Met Tyr Ile
 945 950 955 960
 Asn Asn Ser Gln Glu Phe Gln Asn Thr Gln Lys Asp Asn Phe Pro His
 965 970 975
 Ile Leu Asn Tyr Ser Leu Tyr Thr His Ile Lys Asn Asn Pro Ile Lys
 980 985 990
 Lys Asn Gln Thr Asn Asn Leu Tyr Ile Lys Asn Asp Tyr Tyr Asn Gln
 995 1000 1005
 Gln Glu Lys Glu Ile Asp Lys Ser Cys Ile Asn Asn Lys Phe Glu Thr
 1010 1015 1020
 Ile Asn Asn Tyr Tyr Asn Ile Tyr Thr His Asn Leu Phe Asn Arg Val
 1025 1030 1035 1040
 His Lys Ser Arg Leu Ile Leu Ile Leu Ile Tyr His Phe Leu Phe Ile
 1045 1050 1055
 Ile Ser Ser Asn Asn Leu His Asn Asn Asn Asn Asn Ile Ile Tyr Asn
 1060 1065 1070
 Asn Ile Asn Asn Ile Gln Lys Ser Asn Ser Val Asn Thr Asn Phe Thr
 1075 1080 1085
 Asn Ile Lys Glu Asp Ser Leu Leu Tyr Lys Ile Lys Asn Lys Tyr Leu

1090

1095

1100

Phe Leu Leu Tyr Gln Thr Tyr Met Ile Cys Ile Ser Tyr Ile Asn Met
 1105 1110 1115 1120

Ser Leu Lys Ile Thr Lys Asn Met Asn Asn Asn Lys Asn Ala Gln Ser
 1125 1130 1135

Ser Lys Met His Lys Gln Ile Phe Ser His Ile Ser Glu Leu Val Gln
 1140 1145 1150

Asn Lys Asp Lys Tyr His Met Val Asn Glu Tyr Ala His Tyr Pro Tyr
 1155 1160 1165

Glu Ile Asp Ile Cys Ile Lys Arg Leu Ile Thr Lys Asn Lys
 1170 1175 1180

<210> 147

<211> 213

<212> PRT

<213> Plasmodium falciparum

<400> 147

Met Asn Lys Asn Lys Lys Lys Lys Lys Lys Thr Asn His Val Ile Val
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Glu Asn Ile Gln Lys Glu Cys Ser Phe Val Leu Lys Lys Glu Asn Asn
 20 25 30

Asp Ile Tyr Val Ser Asn Asn Lys Pro Ile Gln Ile Tyr Asn Asp Arg
 35 40 45

Ile Ile Lys Leu Leu Asn Glu Arg Thr His Lys Asn Val Glu Glu Ile
 50 55 60

Ile Glu Gly Asp Tyr Lys Asp Leu Asn Lys Asn Lys Tyr Ile Asn Asp
 65 70 75 80

Thr Val Tyr Ile His Ala Val Gly Ile Asn Ile Leu Lys Ala Ser Tyr
 85 90 95

Ile Ile Gln Asp Leu Phe Ser Tyr Tyr His Glu Phe Val Lys Ser Ile
 100 105 110

Gln Glu Pro Thr Ile Ser His Asn Lys Asn Asn Asn Asn Ile Leu
 115 120 125

Glu Lys Lys Lys Lys Lys Glu Glu Lys Lys Lys Asn Pro Leu Arg Tyr
 130 135 140

Ile Asp Ile His Ile Glu Cys Asn Thr Leu Ile Met Asn Asp Asn Ile
 145 150 155 160

Ile Thr Asn Ile Tyr Asp Met Asp Gln His Phe Asn His Asn Lys Asn
 165 170 175

Asn Asp Asp Asp Lys Ser Phe Tyr Asp Glu Tyr Asp Asn Leu Ile Lys
 180 185 190

Phe Ala Ser Met Lys Tyr Asp Pro Leu Lys His Lys Tyr Leu Glu Val
 195 200 205

Arg Lys Leu Lys Lys
 210

<210> 148

<211> 1351

<212> PRT

<213> Plasmodium falciparum

<400> 148

Met Phe Tyr Val Pro Gln Asn Ile Ser Asn Ile Ser Asn Arg Ile Asn
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 20 25 30
 Phe Cys Leu Ile His Lys Ser Ile Ser Ser Ser Lys Arg Asn Ile Asn
 35 40 45
 Asn Ile Arg Thr Val Asp Thr Phe Thr Asp Lys Gln Ile Tyr Asp Glu
 50 55 60
 His Val Lys Leu Leu Lys Cys Val Leu Arg Leu Glu Lys Asp Phe Leu
 65 70 75 80
 Phe Ile Leu Lys Ser Lys Lys Asn Lys Glu Cys Val Ile Asn Ser Asn
 85 90 95
 Asn Ile Tyr Tyr Asn Asn Asn Asn Asn Asn Ile Ile Asn Tyr Asp His
 100 105 110
 Ser Thr Lys Tyr Asn Gly Asp Asn Gly Asp Asp Ala Ala Ile Glu
 115 120 125
 Lys Cys Ser Pro Pro Leu Leu Asn Thr Asn Glu Lys Asn Ile Lys Lys
 130 135 140
 Asn Lys Ile Leu Leu Tyr Asn Lys Ile Lys Lys Leu Ile Asp Lys Lys
 145 150 155 160
 Cys Asn Asn Ile Met Ser Ile Leu Leu Asn Lys Ser Tyr Phe Thr Val
 165 170 175
 Leu Leu Ser Cys Val Asn Ile Ile Arg Asn Lys Asp Ile Phe Asn Ile
 180 185 190
 Tyr Leu Phe Lys Cys Leu Tyr Leu Asn Asn Gln Trp Ile His Ile Leu
 195 200 205
 Asn Tyr Asn Met Val Val Ser Leu Phe Leu Asn Val Ser Thr Leu Tyr
 210 215 220
 Cys Glu Glu Glu Lys Ile Asn Lys Tyr Arg Asn Thr Tyr His Lys Arg
 225 230 235 240
 His Pro Tyr His Ile Leu Ile Tyr Asn Phe Leu Cys Ile Glu Asn Ile
 245 250 255
 Cys Asn Val Tyr Lys Asn Ile Leu Gln Val Ile Ile Pro Leu Leu Ile
 260 265 270
 Ile Cys Asp Lys Lys Leu Asp Ser Thr Leu Ser Phe Asn Asn Leu Ile
 275 280 285
 Lys Ile Ile Ile Met Phe Phe Lys Ile His Arg Arg Asn Ala Leu Leu
 290 295 300
 Val Thr His Ser Asn Ile Glu Glu Leu Ile Ile His Lys Arg Ile Ser
 305 310 315 320
 Phe Leu Ile Tyr Lys Met Asn Arg Gly Asn Asn Asn Ile Gln His Asp
 325 330 335
 Asp Ile Asn Asn Glu Thr Asn Asp Val Lys Asn Asn Ile Tyr Gly Arg
 340 345 350
 Lys Lys Lys Asn Lys Asn Ile Tyr Gly Asn Asn Asn Asn Asn Asn

355					360					365					
Asn	Asn	Asn	Asn	Lys	His	Met	Asn	Lys	Ser	Ile	Ser	Thr	Asn	Ile	Leu
370						375					380				
Asn	Lys	Tyr	Ile	Lys	Asn	Glu	His	Ile	Val	Thr	Lys	His	Val	Ile	Arg
385					390					395					400
Thr	Asp	Glu	Lys	Lys	Lys	Glu	Leu	Phe	Phe	Cys	Thr	Phe	Val	Asn	Met
				405					410					415	
Thr	Thr	Leu	Leu	Tyr	Glu	Ile	Ile	Leu	Phe	Tyr	Lys	Asn	Ile	Ser	Thr
			420					425					430		
Asn	Asn	Ile	Lys	Ile	Asn	Tyr	Glu	Tyr	Ile	Asp	Asp	Thr	Trp	Asn	Asn
		435					440					445			
Ile	Ile	Thr	Asn	Ile	Ile	Ile	Tyr	Ile	Lys	Asn	Asn	Ile	Pro	Met	Glu
		450					455					460			
Arg	Ile	Lys	Lys	Glu	Thr	His	Leu	Gln	Ser	Ile	Ile	Ser	Leu	Leu	Tyr
465						470					475				480
Ser	Leu	Thr	Val	Leu	Asn	Tyr	Ser	Lys	Leu	Tyr	Glu	Asn	Ile	Phe	Tyr
				485					490					495	
Ile	Phe	Glu	Arg	Ser	Val	Asp	Ile	Ile	His	Asp	Leu	Phe	Lys	His	Asn
			500					505					510		
Met	Arg	Lys	Ile	Asn	Ile	Met	Thr	Phe	Asp	Glu	Leu	Lys	Asn	Asp	Leu
		515					520					525			
Asn	Val	Ser	Phe	Val	Asn	Met	Cys	Asn	Asp	Asp	Asn	Asn	Asn	Asn	Asn
						535					540				
Asp	Asp	Asp	Asn	Asn	Gly	Asp	Asp	Asp	Asn	Asn	Asn	Asn	Asp	Asp	Asn
545					550					555					560
Asn	Gly	Asp	Asp	Asn	Asn	Asp	Asp	Asn	Asn	Val	Ile	Lys	Tyr	Lys	His
				565				570						575	
Ser	Asn	Val	Glu	Pro	Lys	Lys	Tyr	Asn	Lys	Val	Lys	Tyr	Asn	Met	Tyr
			580					585					590		
Asn	Thr	Phe	His	Arg	Asn	Ile	Lys	Phe	Lys	Tyr	Lys	Gln	Asn	Ile	Val
			595				600					605			
His	Asn	Tyr	Leu	Asn	Lys	Ile	Asp	Pro	Leu	Leu	Tyr	Asn	Asn	Phe	Leu
			610			615					620				
Phe	Val	Tyr	Val	Pro	Asp	Leu	Leu	Tyr	Ser	Gln	Asp	Asn	Cys	Thr	Asp
625					630					635					640
Met	Phe	Thr	Leu	Asp	Glu	Leu	Thr	Lys	Leu	Leu	Tyr	Ala	Leu	Ser	Tyr
				645					650					655	
Tyr	Gln	Lys	Glu	Ile	Glu	Lys	Gln	Lys	Lys	Asn	Asn	Lys	Arg	Lys	Ile
			660					665					670		
Tyr	His	Ile	Lys	Asp	Ile	Ile	Ile	Ser	Leu	Leu	Pro	Tyr	Val	Asn	Thr
			675				680					685			
Ile	Val	Glu	Arg	Gln	Ile	Phe	Lys	Leu	Leu	Val	Asn	Lys	Asn	Asn	Asn
			690			695					700				
Ile	Cys	Ser	Lys	Ile	Lys	Asn	Ile	Glu	Thr	Cys	Asn	Leu	Asn	Ile	Tyr
705					710					715					720
Asn	Asn	Val	Asp	Pro	Val	Val	Tyr	Lys	Asn	Lys	Leu	Ala	Val	Gly	Lys
				725					730					735	

Met Glu Lys Asn Asn Tyr Asp Lys Asn Thr Cys Ser Ile Leu Ser Ser
 740 745 750
 Tyr Lys Asn Tyr Leu Asn Ile Cys Asn Asp Asn Thr Tyr Val Ala His
 755 760 765
 Ser Ser Ile Tyr Cys Ile Glu Lys Asn Leu Ser His Leu Leu Asn Ile
 770 775 780
 Tyr Tyr Gln His Lys Ile Val Asp Ile Lys Met Phe Tyr Ile Leu Thr
 785 790 795 800
 Phe Leu Leu Ala Met Pro Lys Lys Lys Tyr Ile Asp Leu Ile Ile Phe
 805 810 815
 Ser Asn Ile Ile Asn Ala Leu Ser Lys Met Cys Tyr Thr Tyr Glu Met
 820 825 830
 Tyr Val Val Leu Phe Tyr Phe Val Asn Lys Val Cys Gly Ile Arg Ile
 835 840 845
 Ser Glu Tyr Val Leu Ser Lys Tyr Phe Phe Arg Asn Gly Leu Val Leu
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 Lys Thr Val Glu Glu Glu Glu Lys Glu Glu Glu Glu Glu Lys Glu Lys
 865 870 875 880
 Glu Lys Glu Glu Glu Glu Glu Asp Glu Lys Glu Glu Glu Glu Asp Lys
 885 890 895
 Glu Lys Glu Lys Glu Glu Glu Lys Glu Glu Glu Lys Asp Lys Glu Glu
 900 905 910
 Glu Asp Glu Lys Asp Lys Glu Lys Glu Lys Glu Glu Glu Ile Gln Lys
 915 920 925
 Lys Val Lys Lys Glu Ile Gln Lys Lys Val Lys Lys Glu Asn Gln Lys
 930 935 940
 Lys Val Lys Lys Glu Asn Gln Tyr Glu Glu Lys Lys Lys Gly Gly Ala
 945 950 955 960
 Asn Lys Ile Leu Pro Phe Tyr Ile Trp Arg Ser Phe Leu Lys Asn Ile
 965 970 975
 Gln Phe Asn Val Lys Asp Gln His Met Leu Asn Ser Leu Val Pro Ala
 980 985 990
 Tyr Val Cys Lys Gly Ser Glu Val Asn Phe Ser Arg Asn Arg Lys Asn
 995 1000 1005
 Asn Tyr Ser Asn Asn Asn Glu Ser Ser Glu Lys Ile Asp Val Tyr Asn
 1010 1015 1020
 Lys Thr Tyr Glu Ile Lys Lys Asn Lys Asn Met Tyr Lys Lys Ile Ser
 1025 1030 1035 1040
 Ser Asn Asp Lys Tyr Met Phe Lys Asn Glu Lys Glu Lys Phe Asn Phe
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 Ile Cys Leu Asn Thr Leu Leu Asn Tyr Met Ser Tyr Thr Asn Asp Ile
 1060 1065 1070
 Gln Tyr Tyr Asn Ile Lys Val His Leu Ile Lys Met Ile Lys Asn Ile
 1075 1080 1085
 Ile Ile Lys Asp Glu Lys Lys Ile Asp Val Arg Leu Leu Cys Ser Ile
 1090 1095 1100

Phe Ile Ser Tyr Thr Arg Leu Asn Ile Tyr Asp Lys Ile Leu Phe Tyr
 1105 1110 1115 1120
 Asn Ile Tyr Lys Lys Leu Gln Thr Gln Lys Leu Asn Phe Gly Asn Ile
 1125 1130 1135
 Ile Ser Ile Leu Ser Tyr Met Asn Lys Thr Ala Ile Tyr Asp Lys His
 1140 1145 1150
 Ile Leu Phe Thr Cys Cys Lys Asp Ile Phe Lys Lys Ile Asn Asp Lys
 1155 1160 1165
 Asn Ile Ile Gln Asn Asn Gln Leu Ser His Leu Ile His Phe Leu Phe
 1170 1175 1180
 Ile Leu Thr Ser Ile Ser Gln Leu Phe Leu Phe Asn Lys Phe His Ile
 1185 1190 1195 1200
 Val Leu Ser Tyr Ile Phe Arg Ile Leu Tyr Tyr Ile Tyr Val Tyr Ile
 1205 1210 1215
 Asn Asn Gln Leu Ile Ile Thr Lys Lys Lys Lys Lys Asn Gln Ser Phe
 1220 1225 1230
 Gln His Val Asn Ile Asn Ile Ser Ser Val Ile Thr Thr Pro Leu Pro
 1235 1240 1245
 Lys Asn Phe Ile Ser Met Phe Asp Ile Ser Leu Asn Ile Leu Tyr His
 1250 1255 1260
 Phe Phe Leu Leu Ile Pro Leu His Asn His Lys Asn Val Ile Glu Cys
 1265 1270 1275 1280
 Val Asn Ile Ser His Leu Asn Ile Leu Asn Ser Leu Leu Ser Tyr Lys
 1285 1290 1295
 Tyr Lys His Lys Tyr His Val Ala Pro Thr Pro Ser Asp Ile Gln Arg
 1300 1305 1310
 Ser Val Leu Asn Ile Val Asn Lys Met Leu Leu Gly His Gly Asn Ile
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 Lys Val Ser Tyr Glu Tyr Lys Met His Asn Met Pro Tyr Gln Ile Asp
 1330 1335 1340
 Ile Leu Ile Ile Lys Gly Val
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<211> 722

<212> PRT

<213> Plasmodium falciparum

<400> 149

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Glu Tyr Leu Asn Leu Ile Ile His Arg Val Lys Gly Tyr Lys Val Leu
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Val Leu Asp Asp Glu Thr Lys Ser Ile Ile Ser Leu Ile Phe Ser His
 35 40 45

Ser Tyr Ile Leu Glu Lys Glu Ile Phe Leu Thr Leu Asn Phe Asn Asp
 50 55 60

Lys Asn Ile Phe Glu Asp Ile Tyr Asn Asn Asn Asn Asp Lys Lys Glu
 65 70 75 80

Asn Phe Asp Phe Met Asn Tyr Lys Ile Lys Asn Leu Lys His Leu Lys
 85 90 95
 Val Ile Phe Leu Leu Arg Pro Thr Tyr Thr Asn Ile Leu Arg Leu Met
 100 105 110
 Ser Glu Leu Lys Lys Pro Leu Phe Ser Glu Tyr Tyr Ile Phe Phe Thr
 115 120 125
 Asn Thr Ile Asn Asp Ile Tyr Ile Glu Lys Leu Ala Lys Ala Asp Glu
 130 135 140
 Phe Asp Val Ile Lys Asn Ile Ile Glu Tyr Tyr Ile Asp Thr Tyr Val
 145 150 155 160
 Leu His Asp Tyr Leu Phe His Leu Asn Ile Asp Tyr Thr Ser Phe Leu
 165 170 175
 Tyr Lys Asn Asp His Lys Phe Ile Asp Lys Glu Lys Lys Lys Lys Glu
 180 185 190
 Leu Asn Tyr Phe Lys Gln Tyr Asn Asn Asn Asn Ile Asn Ser Asn
 195 200 205
 Asn Asn Tyr Ser Ser Asp Gly Arg Tyr Glu Lys Leu Thr Ile Glu Glu
 210 215 220
 Phe Asn Lys Leu Glu Gly Asn Asn Asn Met Ile Tyr Asp Asn Asn Asn
 225 230 235 240
 Asn Asn Asn Asn Asn Asn Asn Ile Asn Ser Gly Asn Ile Asn Tyr Ser
 245 250 255
 His Phe Asn Leu Ser Ile Glu His Ile Asn Asn Asp Asn Arg Asn Asn
 260 265 270
 Ser Asn Ile Thr Leu Tyr Met Asn Gln Ile Val Gln Arg Ile Ile Asp
 275 280 285
 Gly Leu Phe Ser Phe Leu Cys Cys Ile Arg Gln Val Pro Asp Val Ile
 290 295 300
 Tyr Asn Arg His Ser Lys Ile Cys Lys His Ile Ile Asp Met Leu Lys
 305 310 315 320
 Glu Lys Met Leu Arg His Gln Ser Val Phe Asn Asn Ile Leu Asp Ile
 325 330 335
 Tyr Glu Lys Tyr Asn Asp Glu Met Glu Arg Lys Lys Lys Lys Lys Ile
 340 345 350
 Leu Glu Thr Asn Asn Glu Pro Asn Tyr Gln Phe Asn His Leu Ile Asn
 355 360 365
 Gln Asn Ile His Glu Ile Thr Glu Gly Asp Ala Cys Tyr Phe Leu Ile
 370 375 380
 Leu Asp Arg Asn Glu Asp Pro Ile Thr Pro Leu Leu Thr Gln Trp Thr
 385 390 395 400
 Tyr Gln Ser Met Leu His Glu Leu Ile Gly Ile Glu Asn Asn Lys Ile
 405 410 415
 Asn Leu Asn Cys Asn Asn Lys Glu Glu Glu Gln Gln Gln Ile Val Met
 420 425 430
 Ser Cys Asn Tyr Asp Asp Phe Tyr Asn Glu His Leu Phe Asp Asn Phe
 435 440 445
 Gly Asp Leu Gly Gln Ala Val Lys Asn Tyr Val Asp Ile Tyr Gln Glu

450

455

460

Glu Thr Ser Lys Lys Thr Asn Leu Glu Ser Ile Asp Asp Ile Gln Lys
 465 470 475 480
 Phe Ile Asp Ile Tyr Pro Asn Tyr Lys Lys Leu Ser Gly Asn Val Thr
 485 490 495
 Lys His Val Asn Ile Leu His Lys Phe Ser Asp Ile Val Gln Lys Arg
 500 505 510
 Gln Leu Phe Tyr Ile Ser Glu Leu Glu Gln Ser Ile Ala Cys Tyr His
 515 520 525
 Thr Lys Asn Asp His Phe Lys Gln Val Ile Asp Thr Ile Lys Asn Tyr
 530 535 540
 Thr Tyr Thr Asn Tyr Asp Val Leu Arg Leu Ser Leu Leu Tyr Ser Leu
 545 550 555 560
 Lys Tyr Ala Asp Glu Gln His Ile Asn Val Ile Lys Asn Glu Leu Ala
 565 570 575
 Lys Arg Asn Ile Gln Lys Asp Gln Ile Leu Leu Ile Asp Ala Leu Leu
 580 585 590
 Leu Tyr Ser Ser Gln Gln Thr Lys Tyr Asn Gln Leu Phe Lys Glu Gln
 595 600 605
 Thr Phe Leu Asn Leu Ala Lys Thr Thr Ile Thr Arg Thr Ile Lys Gly
 610 615 620
 Thr Ser Asn Val Phe Thr Leu His Lys Ser Tyr Leu Tyr Tyr Leu Leu
 625 630 635 640
 Glu Asp Ile Ile Lys Tyr Lys Ile Asn Thr Gln Leu Tyr Thr Thr Thr
 645 650 655
 Asn Leu Leu His Thr Glu Pro Thr Leu Asn Lys Lys Ile Asn Ser Ile
 660 665 670
 Val Val Phe Phe Ile Gly Gly Ala Thr Tyr Glu Glu Tyr Arg Asp Val
 675 680 685
 Gln His Leu Ser Lys Lys Tyr Asn Ile Ser Ile Val Leu Gly Ser Thr
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 His Met His Asn Ser Gln Ser Phe Leu Ala Asp Val Leu Gln Leu Ile
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 Lys Lys

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<211> 1398

<212> PRT

<213> Plasmodium falciparum

<400> 150

Met Ile Tyr Ser Arg Leu Asn Glu Ile Met Lys Lys Lys Lys Lys Lys
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 Asn Phe Ser Tyr Cys Lys Glu Asn Gln Glu Arg Phe Ile Leu Ile Asp
 35 40 45
 Thr Leu Lys Lys Lys Lys Leu Phe Lys Lys Ser Ile Leu Lys Lys Ile

50					55					60					
Lys 65	Asn	Gln	Lys	Asp	Leu 70	Met	Asn	Met	Ile	His 75	Ile	Lys	Ser	Lys	Lys 80
His	Gln	Leu	Ile	Asn 85	Phe	Ser	Ser	Tyr	Tyr 90	Ile	Lys	Phe	Ile	Lys	Pro 95
Leu	Phe	Asn	Lys 100	Asn	Lys	Tyr	Tyr	Asn 105	Lys	Ser	Leu	Tyr	Lys	Asn	Met
Lys	Ile	Val 115	Val	Asp	Ile	Asn	Glu 120	Asn	Val	Cys	Ile	Tyr	Asn	Asp	His
Tyr	Ile 130	Phe	Val	Tyr	Ile	Ile 135	Lys	Asp	Tyr	Asn	Ile 140	Tyr	Glu	Arg	Leu
Lys 145	Tyr	Lys	Asn	Phe	Lys 150	Cys	Ser	Leu	Phe	Ser 155	Ser	Asp	His	Met	Phe 160
Tyr	Leu	Arg	Lys	Glu 165	Asn	Phe	Tyr	Phe	Phe 170	Tyr	Thr	Phe	Tyr	Phe	Glu 175
Leu	Phe	Ile	Asn 180	Ser	Tyr	Leu	Tyr	Asn 185	Arg	Tyr	Val	Cys	Leu	Lys	Lys 190
Tyr	Asn	Asp 195	Lys	Cys	Lys	Ile	Lys 200	Lys	Asn	Glu	Glu	Asn	Tyr	Glu	Gln
Ala	Asp 210	Glu	Asp	Glu	Glu	Lys 215	Lys	Phe	Val	His	Tyr 220	Lys	Ile	Gly	Gly
Asn 225	Tyr	Phe	Ile	Asn	Asp 230	Glu	Ala	Asp	His	Met 235	Lys	Lys	Thr	Lys	Ile 240
Leu	Ile	Asp	Ser	Asn 245	Glu	Tyr	Asn	Lys 250	Asn	Tyr	Val	Asn	Ile	Phe	Asn 255
Ser	Thr	Phe	Val 260	Tyr	Lys	Asn	Tyr	Met 265	Asp	Val	Glu	Cys	Thr	Asn	Thr 270
Phe	Leu	His 275	Asn	Asn	Asn	Asn	Asn 280	Lys	Tyr	Asp	Asn	Asn 285	Cys	Asn	Asn
Asn 290	Asn	Lys	Tyr	Asp	Asn	Asn	Cys 295	Asn	Asn	Asn	Asn	Lys	Tyr	Asp	Asn
Asn 305	Cys	Asn	Asn	Asn	Lys 310	Tyr	Asp	Tyr	Tyr	Tyr 315	Ser	Ser	Glu	Gln	Tyr 320
Tyr	Lys	Phe	Pro	Pro 325	Leu	Val	Asn	Ile	Gln 330	Ile	Asn	Val	Val	Glu	Ile 335
Phe	Asn	Phe	Val 340	Cys	Thr	Glu	Asn	Ser 345	Asp	Asp	Ile	Asn	Val	Ile	Phe 350
Lys	Ile	Lys	Asp	Glu	Tyr	Gly	Lys 360	Lys	Arg	Arg	Ala	His 365	Thr	Asn	Arg
Ile	Asn	Thr	Glu	Gln	Gln	Lys 375	Lys	Arg	Asp	Ser	Asn 380	Lys	Ile	Ile	Lys
Arg 385	Arg	Asn	Asn	Arg	Asn 390	His	Gln	Ile	Asn	Thr 395	Pro	Asn	Gln	Leu	Ser 400
Asn	Asn	Met	Ile	Ile 405	Lys	Lys	Lys	Lys	Lys 410	Lys	Lys	Lys	Asn	Leu	Ile 415
Met	Lys	Lys	Tyr	Leu	Val	Ile	Gly	Thr 425	Lys	Asn	Gly	Met	Ile 430	Ile	Ile

Asn	Asp	Phe	Leu	Lys	Pro	His	Lys	Ile	Ile	His	Leu	Glu	Lys	Ile	Cys
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Asn	Glu	Pro	Ile	Val	Ser	Ile	Phe	Ile	Phe	Gln	Asn	Asp	Met	Leu	Ile
	450					455					460				
Leu	Asn	Arg	Ser	Gly	Ile	Ile	Phe	Phe	Met	Asp	Ile	His	Asn	Phe	Val
465					470					475					480
Ile	Tyr	Arg	Asp	Ile	Asp	Ile	Phe	Phe	Ser	Leu	Glu	His	Lys	Thr	Lys
				485					490					495	
Asn	Leu	Ser	Tyr	Glu	Asn	Cys	Asn	Asn	Asn	Ile	Lys	Arg	Asn	Cys	Thr
			500					505					510		
Tyr	Asn	Ser	Glu	Glu	Thr	Thr	Gln	Phe	Ile	Asn	Gly	Lys	Lys	Ile	Cys
		515					520					525			
Asn	Gly	Lys	Lys	Met	Cys	Asp	Gly	Lys	Lys	Ile	Arg	Asp	Asp	Asp	Glu
	530					535					540				
Thr	Phe	Glu	Asp	Ser	Thr	Asn	Leu	Ala	Tyr	His	His	Ser	Asn	Asn	Leu
545					550					555					560
Pro	Cys	Asp	Thr	Phe	Glu	Gly	Lys	Arg	Ile	Val	Asn	Arg	Met	Cys	Asn
				565					570					575	
Lys	Lys	Tyr	Asn	Tyr	Asp	Tyr	Lys	Glu	Ser	Tyr	Arg	Thr	Leu	Lys	Lys
			580					585					590		
Arg	Tyr	Ile	Asn	Ser	Phe	Cys	His	Leu	Asn	Met	Tyr	Thr	Ile	Leu	Ile
		595					600					605			
Gly	Thr	Thr	Tyr	Asn	Glu	Ile	Ile	Ile	Tyr	Asn	Leu	Leu	Cys	Asp	Glu
	610					615					620				
Leu	Cys	Tyr	Ile	Tyr	Asp	Lys	Asn	Asn	Lys	Lys	Ile	Ser	Ser	Tyr	Asn
625					630					635					640
Ile	His	Asn	Asn	Asn	Ile	Ile	Tyr	Ser	Ile	Glu	Asn	Cys	Leu	Tyr	Lys
				645					650					655	
Met	Asn	Leu	Lys	Asn	Tyr	Asp	Thr	Ile	Lys	Leu	Leu	Cys	Leu	Pro	Thr
			660					665					670		
Ile	Tyr	Ile	Ser	Ser	Phe	Val	Phe	Tyr	Ser	Asp	Asn	Leu	Leu	Ile	Cys
		675					680					685			
Gly	Ser	Phe	Lys	Gly	Asn	Leu	Tyr	Phe	Ile	Asp	Ile	Cys	Asn	Asn	Asn
	690					695					700				
Asn	Ile	Lys	Ile	Ile	Asn	Arg	Ile	Arg	Lys	Glu	Asp	Phe	Val	Gly	Lys
705					710					715					720
Gln	Arg	Met	Arg	Ile	His	Lys	Glu	Lys	Glu	Ile	Leu	Phe	Val	Phe	Lys
				725					730					735	
Lys	Lys	Ile	Ile	Asn	Asn	Lys	Tyr	Ile	Ile	Asn	Lys	Thr	Lys	Ser	Asp
			740					745					750		
Asn	Ser	Val	Lys	Ile	Tyr	Asn	Glu	Gln	Asp	Met	Lys	Lys	Asn	Asn	Lys
		755					760					765			
Ile	Ile	Ser	Ile	His	Leu	Asn	Lys	His	Lys	Asn	Ile	Leu	Ile	Cys	Ser
	770					775					780				
Phe	Thr	Tyr	Cys	Ile	Tyr	Ile	Tyr	Lys	Leu	Asn	Ile	Ser	Gly	Asn	Glu
785					790					795					800

Lys Ile Asp Leu Arg Cys Ile Ser Tyr Leu Ser Ile Lys Asn Ile Ile
 805 810 815
 His Ile His Val Ile Lys Asn Met Asp Asn Leu Phe Tyr Ile Thr Thr
 820 825 830
 Arg Asp Asp Glu Asn Ile Ser Ser Tyr Asn Tyr Tyr Leu Cys Ser Met
 835 840 845
 Asn Pro Cys Lys Ile Lys Thr Asn Lys Met Glu Pro Leu Tyr Phe Asn
 850 855 860
 Ile Leu Phe Glu Asn Thr Trp Phe Tyr Glu Phe Phe Tyr Tyr Asn His
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 Lys Asp Asp Asn Gln Phe Leu Phe Val Glu Asn Asn Trp Asn Asp Glu
 885 890 895
 Arg Lys Asn Lys Ser Leu Ile Leu Leu Asp Asp Ser Ile Phe Ile Ile
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 Tyr Thr Tyr Cys Ile Asn Lys Ser Arg Gln Ser Phe Glu Asp Thr Tyr
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 Tyr Lys Gln Asn Asn Leu Met Asn Val Asn Asn Thr Ser His Val Ile
 930 935 940
 Lys Arg Asn Glu Tyr Ile Gly Gly Lys Gln Lys Ile Tyr Lys Asn Asn
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 Lys Asn Asn Glu Ser Thr Val Asn Thr Ser Cys Asp Asp Tyr Leu Gly
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 Ser Thr Asn Gln Val Lys Asn Thr Phe Pro Phe Asn His Asn Asn Asn
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 Asn Lys Lys Lys Asn Lys Glu Lys Lys Thr Asn Ile Ile His Gly Lys
 995 1000 1005
 Arg Asn Glu Gln Met Asp Asn Ser Phe Asn Lys Phe Leu Ser Leu Ile
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 His Thr Asn Asn Asn Ser Lys Ala His Val Ser Asn Lys Ser Lys Lys
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 Tyr Asp Lys Ile Lys Ile Val Lys His Ile Pro Gln Val Val Lys Ser
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 Phe Lys Arg Arg Thr Asn Met Cys Lys Met Asp Asn Arg Lys Lys Asp
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 Ile Ser Leu Leu Ser Ile Ile Lys Asn Lys Glu Glu Lys Lys Lys Ile
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 His Asp Ile His Ile Asn Gly Glu Ser Tyr Asn Val Val Ser Lys Gly
 1090 1095 1100
 Val Ser Ile Pro Val Met Leu Lys Asn Lys Leu Leu Asn Val Arg Tyr
 1105 1110 1115 1120
 Glu Lys Glu His Leu Lys Lys Lys Asn Glu Glu Lys Glu Asp Cys Ser
 1125 1130 1135
 Lys Asp Glu Phe Leu Lys Lys Met Lys Ile Ile Lys Lys Lys Lys Asn
 1140 1145 1150
 Asn Asn Asn Asn Lys Ile Asn Asn His Tyr Val Thr Tyr Lys Leu
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 Leu Lys Ser Met Leu Lys Arg Lys Lys Asn Ile Tyr Leu Cys Glu Ser

1170 1175 1180
 Lys Lys Leu Asn Cys Lys His Asp Asp Asp Ile Ile Lys Lys Asp Thr
 1185 1190 1195 1200
 Ser Phe Ile Arg Arg Gly Ile Asn Asn Glu Ser Tyr Ile Arg Asp Asp
 1205 1210 1215
 Ile Tyr Leu Gly Ile Asn Glu Lys Asn Glu Ile Gln Arg Lys Asn Phe
 1220 1225 1230
 Lys Pro Asn Ile Glu Val Asn Lys Glu Ile Ile Glu Ile Glu Gln Phe
 1235 1240 1245
 Cys Asn Arg Gly Gly Asp Leu Cys Val Ile Asn Asn Gly Glu Ile Asn
 1250 1255 1260
 Asn Leu Ser Tyr Cys Ile Asn Lys Glu Thr Lys Leu Arg Thr Lys Gly
 1265 1270 1275 1280
 Leu Gly Tyr Ile Gln Asn Tyr Leu Lys Lys Tyr Met Asn Thr Asp Ile
 1285 1290 1295
 Lys Met Lys Gly Glu Phe Arg Asp Asn Ile Asn Arg Ser Ser Asn Ser
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 Ile Lys His Ile Asn Ser Asn Leu Tyr Lys Ile Ser Pro Gln Asn Ser
 1315 1320 1325
 Asp Thr Thr Asn Tyr Met Gly Glu Lys Asp Lys Phe Ile Asn Ser Tyr
 1330 1335 1340
 His Val Asn Asn Tyr Val His Ser Met Met Ile Arg Leu Pro Gln Arg
 1345 1350 1355 1360
 Glu Ser Val Thr Tyr Ile Glu Lys Lys Lys Lys Asn Lys Ile Asp Ile
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 Thr Lys Tyr Asn Ala Tyr Thr Lys Leu Ile Lys Lys Gly Glu Gly Asp
 1380 1385 1390
 Lys Lys Lys Asn Leu Ile
 1395

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 <211> 686
 <212> PRT
 <213> Plasmodium falciparum

<400> 151
 Met Gly Ile Ile Lys Arg Ile Leu Leu Leu Gln Ile Val Leu Val Leu
 1 5 10 15
 Val Leu Cys Cys His Arg Ile Arg Cys Glu Glu Val Ser Ser Ile Ser
 20 25 30
 Asn Lys Ala Ser Val Lys Asp Glu Gly Gln Asn Asn Asn Ser Asn Lys
 35 40 45
 Ser Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 50 55 60
 Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 65 70 75 80
 Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Thr
 85 90 95
 Ser Gly Leu Ser Val Lys Ser Glu Asn Phe Asn Met Ile Ile Lys Pro

100					105					110					
Glu	Gly	Asp	Glu	Gln	Ser	Pro	Leu	Asn	Ser	Leu	Ser	Val	Glu	Gln	Lys
		115					120					125			
Lys	Asp	Thr	Pro	Gln	Ile	Glu	Glu	Leu	Arg	Lys	Lys	Glu	Glu	Thr	Lys
	130					135					140				
Asp	Gln	Lys	Val	Thr	Glu	Gln	Val	Asn	Asn	Leu	Gln	Ser	Lys	Asn	Glu
145					150					155					160
Lys	Leu	Thr	Asn	Thr	Leu	Asp	Gln	Val	Val	Gln	Gly	Asp	Asn	Asn	Asn
				165					170					175	
Asn	Thr	Leu	Asp	Thr	Thr	Thr	Ser	Glu	Thr	Ser	Ser	Ser	Ser	Thr	Thr
			180					185					190		
Asn	Thr	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Ile	Asn	Asn	Asn	Ser	Asn	Ser
		195					200					205			
Asn	Asn	Asn	Asn	Ser	Asn	Ile	Asn	Asn	Asn	Asn	Asn	Ile	Asn	Asn	Asn
	210					215					220				
Asn	Asn	Asn	Ile	Tyr	Leu	Gly	His	Asn	Asn	Asn	Leu	Asp	Ser	Asn	Ile
225					230					235					240
Ile	Gln	Gln	Thr	Asn	Phe	Ile	Glu	Asn	Thr	Glu	His	Asn	Val	Gln	Lys
				245					250					255	
Gln	Asn	Glu	Lys	Lys	Glu	Asn	Asn	Asn	Thr	Ser	Gly	Ser	Thr	Ser	Lys
			260					265					270		
Ser	Ser	Ser	Ser	Gln	Asn	Leu	Glu	Asn	Ser	Lys	Glu	Val	Glu	Gln	Ala
		275					280					285			
Val	Val	Lys	Glu	Ile	Thr	Pro	Lys	Glu	Glu	Thr	Ser	Asn	Gly	Gln	Asn
	290					295					300				
Lys	Asp	Lys	Glu	Lys	Ile	Leu	Ser	Asn	Val	Gln	Asn	Asp	Ala	Thr	Asn
305					310					315					320
Lys	Lys	Met	Val	Asn	Asp	Asn	Thr	Lys	Gly	Leu	Ser	Ser	Asp	Asn	Met
				325					330					335	
Asn	Ser	Ser	Asn	Asp	Leu	Asn	Ala	Pro	Asn	Lys	Met	Asn	Glu	Asp	Ser
			340					345					350		
Lys	Gly	Ser	Ser	Glu	Tyr	Val	Asp	Leu	Ala	Ser	Gln	Lys	Ile	Tyr	Asp
		355					360					365			
Glu	Met	Asn	Lys	Asn	Val	Glu	Glu	Ser	Gly	Ser	Asn	Leu	Tyr	Phe	Leu
	370					375					380				
Lys	Leu	Leu	Ser	Ile	Gly	Ser	Ser	Ile	Phe	Met	Gln	Leu	Ile	Phe	Leu
385					390					395					400
Pro	Thr	Ile	Phe	Lys	Ile	Ile	Lys	Lys	Lys	Thr	Thr	Gly	Glu	Leu	Asp
				405					410					415	
Gly	Phe	Pro	Tyr	Ile	Ile	Leu	Leu	Leu	Ser	Ser	Phe	Leu	Trp	Leu	Val
			420					425					430		
Tyr	Gly	Met	Leu	Leu	Asn	Asn	Ser	Ala	Ile	Val	Phe	Pro	Asn	Leu	Val
		435					440					445			
Gly	Leu	Ile	Leu	Gly	Ile	Leu	Tyr	Cys	Val	Ile	Tyr	His	Lys	Asn	Cys
	450					455					460				
Lys	Asn	Met	Trp	Leu	Lys	Gln	Lys	Leu	His	Ser	Tyr	Tyr	Lys	Ile	Cys
465					470					475					480

Gly Phe Ile Cys Phe Leu Leu Tyr Ala Phe Leu Tyr Ile Leu Ser Tyr
 485 490 495
 Glu Gln Tyr Glu Val Phe Val Gly Phe Val Ala Phe Ile Ser Ser Ile
 500 505 510
 Val Asn Phe Gly Ala Pro Leu Ser Tyr Ile Gln Ile Val Ile Lys Lys
 515 520 525
 Lys Asn Ser Ser Leu Ile Pro Met Glu Val Thr Met Gly Ser Leu Leu
 530 535 540
 Cys Ser Phe Leu Trp Leu Thr Tyr Gly Phe Thr Leu Lys Asp Gly Phe
 545 550 555 560
 Ile Ile Ile Pro Asn Leu Cys Gly Phe Ile Leu Ser Leu Leu Gln Val
 565 570 575
 Leu Leu Ile Ile Leu Tyr Ser Asn Lys Glu Asn Thr Thr Phe Asn His
 580 585 590
 Asp Ser Asp Thr Thr Val Ser Glu Ile Ser Thr Arg Lys Asn Arg Asn
 595 600 605
 Lys Tyr Ile Pro Asp Thr Asn Ser Asn Met Phe Phe Asn Glu Tyr Asn
 610 615 620
 Val Asp Glu Glu Asn Arg Met Thr Glu Ile Ser Thr Thr Met Pro Thr
 625 630 635 640
 Thr Ile Phe Asp Leu Ser Phe Asp Glu Thr Ser Pro Leu Thr Gly Thr
 645 650 655
 Phe Asn Ile Asp Tyr Ser Arg Pro Gly Val Ser Asn Gln Lys Tyr Leu
 660 665 670
 Lys Arg Ser Glu Ser Leu Glu Lys Asn Thr Ala Ile Thr Phe
 675 680 685

<210> 152

<211> 980

<212> PRT

<213> Plasmodium falciparum

<400> 152

Met Lys Glu Leu Arg Lys Glu Leu Ile Leu Lys Lys Lys Asn Tyr Glu
 1 5 10 15
 Glu Leu Arg Leu Lys Leu Asn His Leu Glu Cys Val Glu Arg Asp Ser
 20 25 30
 Val Lys Ile Asn Ser Glu Lys Glu Lys Gly Glu Lys Val Ile Tyr Glu
 35 40 45
 Leu Lys Glu Lys Leu Asp Asn Asp Glu Lys Ile Ile Asn Asp Leu Lys
 50 55 60
 Lys Lys Asn Ser Tyr Gln Val Tyr Lys Met Lys Asp Tyr Glu Lys Arg
 65 70 75 80
 Glu Asn Asn Leu Ile Asn Glu Ile Asn Lys Leu Lys Leu Phe Ile Glu
 85 90 95
 Glu Asn Lys Met Thr Val Glu Arg Gly Asn Glu Met Asn Asn Lys Lys
 100 105 110
 Leu Glu Glu Met Lys Gln Lys Asn Lys Glu Leu Ile Asn Asn Leu Asn
 115 120 125

Asp Ile Ser Asp Glu Leu Lys Asn Cys Ile Glu Gln Val Asn Ser Val
 130 135 140
 Ser Arg Asn Met Ala Asn Val Glu Lys Glu Lys Glu Asn Ile Ile Asn
 145 150 155 160
 Glu Leu Gln Ile Leu Arg Met Lys Asn Asp Thr Met Arg Lys Arg Ile
 165 170 175
 Ser Lys Phe Val Glu Gln Glu Lys Val Leu Lys Phe Lys Leu Tyr Thr
 180 185 190
 Leu Asn Asn Asp Ile Phe Ser Lys Asn Glu Lys Leu Asn Asp Met Gln
 195 200 205
 Lys Lys Leu Asn Asp Val Asn Glu Lys Tyr Lys Asn Ile Val Glu Cys
 210 215 220
 Leu Asn Asn Tyr Lys Thr Glu His Lys Glu Gln Ile Glu Lys Lys Ile
 225 230 235 240
 Glu Arg Ile Asn Thr Leu Lys Gln Asn Tyr Tyr Tyr Leu Lys Lys Glu
 245 250 255
 Tyr Asp Leu Lys Asn Lys Glu Leu Glu Lys Asn Ile Glu His Gly Lys
 260 265 270
 Lys Leu Glu His Glu Leu Ser His Cys Tyr Glu Glu Asn Gln Lys Leu
 275 280 285
 Asn Glu Glu Ile Lys Arg Arg Asn Ser Phe Ile Lys Asn Lys Asp Arg
 290 295 300
 Lys Ile Asp Leu Leu Thr Asn Ile Glu Asn Glu Leu Leu Lys Lys Lys
 305 310 315 320
 Glu Ile Asn Asn Ile Lys Leu Met Glu Lys Gln Asn Val Ile Lys Asn
 325 330 335
 Asn Glu Gln Leu Leu Lys Asp Ile Lys Asp Glu Asn Glu Lys Met Asn
 340 345 350
 Glu His Val Asn Lys Leu Gln Asn Glu Leu Ile Lys Arg Glu Leu Gln
 355 360 365
 Asn Lys Cys Ile Ser Lys Asp Ile Glu Phe Cys Lys Lys Glu Lys Glu
 370 375 380
 Asp Lys Ile Lys Asn Leu Glu Asp Asp Leu Leu Glu Lys Lys Lys Cys
 385 390 395 400
 Ile Glu Asn Leu Lys Asp Glu Leu Ile Asn Ile Lys Lys Lys Met Glu
 405 410 415
 Asp Lys Met His Met Thr Asn Glu Met Asp Leu Leu Ser Asn Lys Val
 420 425 430
 Glu Glu Leu Asn Arg Ile Asn Lys Thr Tyr Glu Lys Asn Ile Val Glu
 435 440 445
 Leu Asn Asn Glu Leu Asp Val Ile Lys Lys Lys Leu Asn Asp Glu Glu
 450 455 460
 Phe Leu Lys Glu Glu Glu Lys Lys Lys Asn Ile Asp Met Val Tyr Lys
 465 470 475 480
 Ile Lys Glu Tyr Glu Ile Gln Ile Lys Glu Lys Glu Asn Glu Ile Asp
 485 490 495

Ser Leu Lys Lys Asn Glu Gln Asn Leu His Val Leu Lys Asn Glu Glu
 500 505 510
 Leu Asn Glu Lys Glu Ile Ile Leu Lys Asn Lys Tyr Asp Lys Glu Ile
 515 520 525
 Asn Met Ile Ile Glu Gln Tyr Asn Lys Lys Ile Gln Glu Glu Lys Asp
 530 535 540
 Met Leu Asn Asn Lys Ile Lys Ser Met Asp Gln Thr His Lys Asn Gln
 545 550 555 560
 Ile Glu Glu Met Gln Glu Glu Asn Lys Lys Glu Leu Lys Arg Leu Lys
 565 570 575
 Asn Val Cys Asp Met Asn Leu Gln Ser Gln Ile Leu Ile Lys Glu Asn
 580 585 590
 Glu Lys His Met Gln Glu Lys Val Glu Glu Tyr Lys Asn Leu Leu Lys
 595 600 605
 Gln Lys Asp Gln Glu Leu Lys Asn Ile Ile Gln Glu Tyr Asp Glu Arg
 610 615 620
 Ile Glu Ile Gln Asn Lys Glu Met Glu Asp Ile Val Asn Asp Cys Glu
 625 630 635 640
 Glu Lys Leu Lys Gln Ala Lys Ile Asn Asn Lys Lys Leu Thr Thr Ala
 645 650 655
 Thr Asn Met Ala Asn Asn Asn Asn Met Leu Met Asp Glu Asn Leu Lys
 660 665 670
 Glu Lys Asp Lys Lys Ile Asn Asp Leu Met Lys Asp Met Glu Lys Lys
 675 680 685
 Lys Glu Glu Ile Asn Lys Leu Val Glu Glu Lys Ser Lys Leu Glu His
 690 695 700
 Ser His Val Lys Ile Gln Asn Glu Met Ser Leu Leu Val Glu Gln Asn
 705 710 715 720
 Glu Lys Leu Lys Glu Glu Met Gly Leu Ser Arg Ile Ala Ile Lys Asp
 725 730 735
 Met Glu Glu Ile Lys Lys Asp Met Glu Lys Tyr Glu Glu Glu Lys Lys
 740 745 750
 Lys Asn Glu Glu Glu Arg Lys Lys Asn Glu Glu Glu Arg Lys Lys Asn
 755 760 765
 Glu Glu Glu Arg Lys Lys Asn Glu Glu Glu Lys Lys Lys Asn Glu Glu
 770 775 780
 Glu Arg Lys Lys Asn Glu Glu Glu Lys Lys Lys Leu Glu Lys Asp Lys
 785 790 795 800
 His Gln Phe Glu Glu Glu Lys Glu Arg Met Glu Ile Tyr Glu His Gln
 805 810 815
 Lys Glu Asp Arg Lys Arg Lys Asp Lys Lys Lys Lys Gly His Ser Ser
 820 825 830
 Asp Lys Glu Glu Lys Tyr Asn Lys Lys Glu Lys Thr Lys Glu Lys Ser
 835 840 845
 Ser Asn Ile Leu Phe Asp Glu Glu Tyr Ile Ile Gln Leu Glu Glu Leu
 850 855 860
 Arg Asp Thr Gly Glu Asn Cys Phe Ile Tyr Leu Lys Ser Leu Ser Lys

865		870		875		880
Glu Leu Asp Val	Ile Ile Asn Lys Leu Lys Ser Lys Asp Asp Ala Leu					
	885			890		895
Leu Asn Asp Ala	Phe Asn Lys Ile Asn Leu Ala Ile Thr Ser Trp Asn					
	900			905		910
Ile Phe Asn Glu	Glu Asn Lys Glu Gly Asp Asn Ile Thr Thr Val Glu					
	915			920		925
Asn Thr Ala Thr	Glu Gly Asn Ile Thr Ile Asp Glu Asn Thr Thr Glu					
	930			935		940
Val Glu Met Asn	Asn Glu Glu Val Tyr Lys Ile Phe Ser Val Glu Lys					
	945			950		955
Tyr Asp Met Leu	Lys Lys Glu Val Gly Glu Lys Val Glu Cys Ile Gln					
	965			970		975
Lys Leu Ile Gly						
	980					

<210> 153
 <211> 1122
 <212> PRT
 <213> Plasmodium falciparum

<400> 153	
Met Ile Asn Lys Ile Leu Asn Gly Trp Arg Ile Ser Phe Leu Leu Asn	
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Leu Val Ile Phe Leu Val Gln Gln Leu Gly Leu Tyr Tyr Ile Leu Phe	
20 25 30	
Glu Tyr Asn Lys Leu Ile Leu Leu Cys Leu Phe Asp Ile Tyr Ile	
35 40 45	
Phe Ile His Phe Phe Phe Asn Asn Ser Gln Ser Phe Ser Ala Val Lys	
50 55 60	
Gly Gly Lys Cys Trp Val Leu Tyr Val Tyr Ser Ile Ser Ile Lys Val	
65 70 75 80	
Ile Phe Met Tyr Phe Phe Ala Phe Asn Asp Asn Phe Phe Leu Ala Asp	
85 90 95	
Met Thr Lys Asp Tyr Tyr Asn Lys Cys Val Ile Phe Leu Leu Leu Asn	
100 105 110	
Leu Ser Thr Leu Ile Tyr Thr Ala Leu Ser Val Lys Ser Tyr Lys Gln	
115 120 125	
Leu Tyr Glu Asp Asp Ile Thr Ile Ser Asn Glu Lys Leu Phe His Asn	
130 135 140	
Asp Leu Ile Leu His Val Val Ile Asp Leu Phe Asp Met Phe Glu Leu	
145 150 155 160	
Leu Phe Thr Leu Val Lys Met Ser Tyr Ile Ile Lys Asn Thr Asn Phe	
165 170 175	
Trp Ile Lys Ile Met Gly Gly Val Leu Ile Ser Phe Ser Leu Tyr Leu	
180 185 190	
Asn Ala Tyr Ser Phe Pro Ile Ile Ser Ile Val Pro Glu Lys Asn Asn	
195 200 205	
Lys Asn Leu Asp Leu Gly Asp Ile Tyr Phe Cys Lys Lys His Ala Ala	

210	215	220
Met Ile Gly Ile Ile Leu Val Asp Ile Pro Phe Met Ile Leu Arg Phe 225 230 235 240		
Tyr Phe Leu Ala Phe Phe Phe Ser Asn Ile His Phe Gln Pro Leu Leu 245 250 255		
Ile Lys Asn Ile Cys Phe Ile Pro Ile Lys Cys Lys Ala Ile Lys Asn 260 265 270		
Cys Asn Phe Ile Phe Glu Gln Leu Lys Lys Asn Ile His His Ser Asn 275 280 285		
Lys His Thr Lys Asn Lys Tyr Ile Asn Ser Gln Gln Thr Cys Thr Tyr 290 295 300		
Asp Ser Tyr Leu Lys Asn Gly Arg Gln Lys Lys Lys Ser Ser Leu Ile 305 310 315 320		
Tyr Asn Thr Asn Asn Phe Val Ser Leu Thr Val Ala Phe Arg Asn Ser 325 330 335		
Val Asp Ile Arg Ser Ile Ala Ser Ile Arg Asn Glu Ile Asn Asn Asn 340 345 350		
Arg Ala Leu Lys Asn Lys Thr Gly Glu Lys Gln Met Gly Lys Met Gly 355 360 365		
Lys Met Gly Lys Met Gly Lys Met Gly Lys Met Gly Lys Met Gly Lys 370 375 380		
Met Gly Lys Met Gly Lys Met Gly Lys Met Gly Lys Met Gly Lys Met 385 390 395 400		
Gly Lys Met Asp Lys Met Gly Lys Met Asp Lys Met Gly Lys Met Asp 405 410 415		
Lys Met Gly Lys Met Asp Lys Met Gly Asp Ser Gln Met Gly Lys Met 420 425 430		
Glu Gly Asn Gln Met Gly Lys Met Gly Asp Asn His Thr Cys Asp Asn 435 440 445		
His Thr Ser Asp Ser His Thr Cys Asp Ser His Thr Cys Asp Ser His 450 455 460		
Thr Cys Asp Asn His Thr Ser Asp Asn Asn Thr Cys Asn Asn His Thr 465 470 475 480		
Ser Asp Asn Asn Thr Cys Asn Asn His Thr Cys Asp Asn His Thr Cys 485 490 495		
Asp Asn His Thr Ser Asp Asn Asn Thr Cys Asn Asn His Thr Cys Asn 500 505 510		
Asn His Thr Cys Asn Asn His Thr Cys Asn Asn His Thr Cys Asn Asn 515 520 525		
His Thr Cys Asn Asn His Thr Cys Asn Asn His Thr Ser Asp Asn Asn 530 535 540		
Thr Cys Asn Asn His Thr Cys Asp Asn Asn Thr Cys Asn Asn His Thr 545 550 555 560		
Leu Gly Asn Pro His Phe Tyr Asn Pro His Phe Tyr Asn Asn Thr Leu 565 570 575		
Asp Met Pro Asn Asn Lys Lys Glu Thr His Asn Asn Phe Ser His Asn 580 585 590		

Asp Thr Gln Glu Asn Asn Ile Met Lys Asn Lys Asp Gly Leu Tyr Leu
 595 600 605
 Asn Thr Lys Ser Tyr Asp Asn Asn Leu Phe Gly Ala Ser Asn Lys Leu
 610 615 620
 Thr Ser His His Glu Asn Ile Lys Lys Ile Ile Glu Leu Asn Thr Thr
 625 630 635 640
 Lys Leu Val Glu Glu Arg Asn Asn Ser Leu Leu Asp Ile Asn Glu Tyr
 645 650 655
 Asn Asn Asn Ser Asn Asp Leu Asn Glu Tyr Phe Asp Asn Leu Ile Glu
 660 665 670
 Asn Asn Ile Leu Ser Tyr Arg Lys Met Asn Ile Lys Lys Asn Lys Ile
 675 680 685
 Gly Thr Lys Phe Ile Met Asn Lys Leu Met Tyr Thr Asn Val Ser Asn
 690 695 700
 Asn Glu Arg Tyr Arg Tyr Tyr Leu Asp Asp Asn Leu Lys Val Ser Tyr
 705 710 715 720
 Ile Asn Gln Leu Arg Leu Met Ile Pro Tyr Ile Thr Tyr Cys Leu Gly
 725 730 735
 Lys Ile Ala Met Ser Ile Val Phe Tyr Ile Phe Tyr Ile Lys Phe Asp
 740 745 750
 Ile Ser Tyr Leu Lys Leu Ile Leu Thr Asp Tyr Lys Met Tyr Phe Lys
 755 760 765
 Leu Phe Glu His Lys Asn Ile Ile Phe Ile Val Ser Phe Ser Ile Ile
 770 775 780
 Leu Gly Asn Thr Ile Ile Ser Phe Phe Ser Phe Ile Phe Leu Ser Ser
 785 790 795 800
 Phe Phe Glu Val Val Leu Ser Thr Leu Phe Ile Phe Ile Lys Cys Ile
 805 810 815
 Ser Glu Phe Leu Phe Leu Leu Leu Leu Val Tyr Asn Glu Val Phe Glu
 820 825 830
 Ile Phe Leu Arg Asn Ile Lys Gln Pro Asp Lys Tyr Ala Pro Tyr Phe
 835 840 845
 Phe Leu Thr Phe Ala Val Ile Pro Ser Phe Lys Ile Ile Arg Asn Ile
 850 855 860
 Tyr Phe Phe Leu Cys Ala Leu Ser Gly Arg Gln Phe Ile Ala Tyr Ile
 865 870 875 880
 Ile Arg Pro Phe Ile Lys Asp Lys Asn Ile Ser Lys Leu Pro Asn Phe
 885 890 895
 Phe Asn Ile Lys Glu Tyr Asn Asn Asn Asn Asn Asn Asn Asn Asn
 900 905 910
 Asn Ala His Asn Asn Asn Ala His Asn Asn Asn Asn Ala His Asn Asn
 915 920 925
 Asn Ile Ser His Asn Met Asn Tyr Ile Asn Glu Asp Tyr Tyr Leu Phe
 930 935 940
 Asn Asn Asn Asp Met Tyr Thr Lys Asn Thr Val Lys Gly Asp Tyr Lys
 945 950 955 960

Gly Phe Ile Ser Ile Ala Ser Leu Leu Ile Tyr Ile Asn Thr Lys Tyr
 965 970 975
 Met His Gly Leu Ala Ser Leu Ser Thr Leu Met Leu Gly Asn Asn Phe
 980 985 990
 Ile Lys Asn Leu Arg Leu Asn Tyr Asn Leu Arg Asn Asn His Ile Leu
 995 1000 1005
 Leu Ile Phe Ile Asn Phe Phe Thr Arg Leu Ser Leu Leu Leu Phe Ile
 1010 1015 1020
 Tyr Val His Tyr Lys Thr Ser Asp Lys Leu Tyr Glu Tyr Val Glu Tyr
 1025 1030 1035 1040
 Phe Tyr Tyr Leu Val Thr Phe Ile Phe Ile Val Asp Phe Ile Phe Lys
 1045 1050 1055
 Trp Ile Tyr Met Phe Ile Ser His Asn Leu Arg Leu Cys Ala Ala Tyr
 1060 1065 1070
 His Leu Glu Leu Lys Ser Met Tyr Glu Asp Ile Tyr Tyr His Ser Gln
 1075 1080 1085
 Ile Lys Lys Glu Ser Ser Lys Ile Tyr Leu Lys Gln Leu Tyr Thr Lys
 1090 1095 1100
 Tyr Gln Thr Asn Asn Phe Tyr Tyr Tyr Asn Ile Pro Leu Phe Ser Glu
 1105 1110 1115 1120
 Phe Ile

<210> 154
 <211> 549
 <212> PRT
 <213> Plasmodium falciparum

<400> 154

Met Glu Glu Lys Lys Lys Ile Asn Asn Lys Ser Asn Ser Arg Val Ser
 1 5 10 15
 Asn Asp Asp Thr Asn Lys Glu Lys Arg Lys Lys Leu Lys Pro Ile Gln
 20 25 30
 Val Arg Arg Ser Ile Lys Asp Ile Ile Ile Ser His Asn Pro Tyr Asp
 35 40 45
 Tyr Ile Tyr Asn Tyr Lys Gly Asn Asp Ile Asp Ile Phe Asp Ile Asn
 50 55 60
 Lys His Asp Lys Ile Val Lys Asp Arg Thr Ser Glu Ile Glu Glu Asn
 65 70 75 80
 Ser Asn Ile Phe Ile Glu Asn Glu Ile Leu Asp Asn Asn Glu Met Leu
 85 90 95
 Leu Arg Lys Glu Leu Asn Glu Leu Ile Asn Lys Asp Asp Leu Ser Glu
 100 105 110
 Asp Met Lys Asn Asp Ile Lys Ala Leu Tyr Ile Glu Val Gln Glu Met
 115 120 125
 Tyr Leu Ile Leu Lys Asn Asp Ile Lys Asn Asn Ile Pro Ser Ser Asp
 130 135 140
 Glu Ile Ile Lys Leu Tyr Leu Ala Asp Asp Gln Lys Asp Lys Ser Thr
 145 150 155 160

Asn Ile Ile Trp Lys Arg Phe Cys Phe Tyr Lys Leu Leu Ser Asp Lys
 165 170 175

Leu Asn Asp Leu His Ile Ser Thr Ile Ser Ser Tyr Arg His Thr Tyr
 180 185 190

Leu Lys Thr Ile Tyr Ile Trp Tyr Lys Lys Asn Lys Lys Leu Leu Phe
 195 200 205

Asn Thr Asp Asp Asn Lys Glu Val Phe Gly Gly Asn Asn Ile Val Gly
 210 215 220

Glu Ile Asn Glu Val Asp Glu Lys Asn Glu Ser Asp Glu Lys Asn Glu
 225 230 235 240

Val Asp Glu Lys Asn Glu Gly Gly Glu Lys Asn Val Asp Glu Lys Asn
 245 250 255

Glu Gly Gly Glu Lys Asn Val Asp Glu Lys Asn Glu Gly Asp Glu Lys
 260 265 270

Asn Ile Thr Asn Gln Asn Glu Ile Ile Lys Asn Lys Asp Pro Leu Asn
 275 280 285

Cys His Thr Lys Lys Glu Glu Thr Glu Lys Glu Met Lys Lys Asp Tyr
 290 295 300

Ala Lys Lys Ile Ser His Asn Phe Asp Glu Thr Leu Gln Glu Glu Met
 305 310 315 320

Asn Lys Ile Lys Lys Glu His Glu Ile Lys Glu Asn Asp Ile Asn Leu
 325 330 335

Leu Val Tyr Asn Glu Glu Pro His Asp Val Leu Asn Lys Tyr Thr Phe
 340 345 350

Pro Asn Asp Val Phe Leu Leu Asn Asn Thr Lys Ile Ser Asp Lys Asn
 355 360 365

Ile Lys Asn Val Lys Glu Glu Gln Asn Val Val Ser Asn Asp Leu Asn
 370 375 380

Val Leu Leu Leu Arg Asn Asp Lys Asp Glu Glu Asp Lys Tyr Ala Lys
 385 390 395 400

Gly Ile Cys Glu His Val Ser Leu Asp Ile Phe Ile Asn Asn Asn Asp
 405 410 415

Ala Phe Asn Ile Asn Thr Asn Asp Ala Phe Asn Ile Asn Thr Asn Asp
 420 425 430

Thr Phe Asn Ile Asn Thr Asn Asp Ala Phe Asn Ile Asn Thr Asn Asp
 435 440 445

Ala Phe Asn Ile Asn Thr Asn Asp Ala Phe Asn Ile Asn Thr Asn Asp
 450 455 460

Thr Phe Asn Ile Asn Thr Asn Asp Thr Phe Asn Ile Lys Thr Asn Asp
 465 470 475 480

Thr Leu Ser Ile Asn Asn Tyr Asn Leu Asp Ile Lys Glu Glu His Lys
 485 490 495

Asn Val Pro Ile Pro Leu His Thr Asn Lys Ile Lys Glu Leu Glu Glu
 500 505 510

Glu Ile Lys Lys Gln Lys Leu Leu Ile Lys Lys Lys Glu Ile Glu Ile
 515 520 525

Ile Asn Ser Pro Ile Gly Ile Lys Phe Lys Asp Ile Phe Gly Lys Phe

530

535

540

Gln Asp Ile Asn Asn
545

<210> 155
<211> 192
<212> PRT
<213> Plasmodium falciparum

<400> 155
Met Leu Leu Gly Arg Arg Tyr Ile Thr His Lys Tyr Lys Ile His Ile
1 5 10 15
Lys Lys Lys Lys Lys Glu Asn Asp Lys Lys Asn Asn Ile Thr Asn Val
20 25 30
Asn Tyr Lys Thr Asn Asn Val Ser Glu Ser Ile Ser Val Ile Ser Ser
35 40 45
Leu Ile Ile Lys Leu Ile Lys Tyr Met Asn Ser Pro Ile Ser Leu Asn
50 55 60
Lys Ile Ile Ile Gly Asn Asn Phe Ile Lys Asn Thr Arg Leu Asp Asn
65 70 75 80
Phe Leu Phe Phe Ser His Ile Lys Glu Ile Thr Phe Lys Leu Ile Leu
85 90 95
Tyr Phe Ile Ser Leu Leu Ile Ser Leu Arg Tyr Lys Tyr Ile Asn Ser
100 105 110
Leu Phe Ile Leu Thr Leu Phe Phe Ile Asn Ile Ile Leu Ser Thr Leu
115 120 125
Tyr Leu Ile Phe Ser Lys Ile Asn Arg Asn Val Ala Met Glu Tyr Ile
130 135 140
Leu Ala Gln Ala Ile Tyr Ala His Arg Asn Glu Asp His His Lys Gly
145 150 155 160
Ile Asp Leu Leu Asp Phe Glu Lys Lys Lys Lys Lys Ala Tyr Gln Lys
165 170 175
Tyr Ser Tyr Asp Tyr Met Ile Leu Phe Gly Asn Thr Leu Asn Tyr Tyr
180 185 190

<210> 156
<211> 307
<212> PRT
<213> Plasmodium falciparum

<400> 156
Met Ile Lys Asn Val Cys Phe Ile Ile Ile His Gly Ala Arg Ile Tyr
1 5 10 15
Arg Lys Cys Lys Tyr His Asn His Lys Lys Lys Asn Lys Lys Lys
20 25 30
Asn Pro Lys Glu Lys Arg Asp Arg His Lys Ile Ile Thr Asn Ile Asn
35 40 45
Asp Asn Val Asn Ile Asn Gly Phe Gln Asp Val Pro Leu Tyr Ser Asn
50 55 60

342

Lys Asp Met Glu Ile Gln Ser Asn Lys Gln Lys Tyr Trp Ser Arg Asn
 65 70 75 80
 Met Asp Lys Met Asp Ile His Ser Thr Asn Thr Lys Ile Phe Phe Asp
 85 90 95
 Lys Asn Ile Asn Phe Asp Lys Asn Phe Phe Cys Asn Tyr Thr Ser Arg
 100 105 110
 Phe Ser Asp Ile Ile Ile Asn Ile Asp Asp Ile Asp Tyr Ile Asn Tyr
 115 120 125
 Lys Arg Ile Lys His Leu Asn Tyr Glu Lys Ile Lys Arg Ser Leu Tyr
 130 135 140
 Phe Phe Tyr Leu Lys Tyr Asn Gly Ile Ser Ile Lys Lys Tyr Ile Ser
 145 150 155 160
 Cys Tyr Ile Asp Asn Ile Glu Lys Tyr Ser Ile Arg Tyr Phe Phe Ile
 165 170 175
 Ile Phe Phe Phe Phe Ile Phe Ile Ala Ile Lys Ile Thr Ile Leu Val
 180 185 190
 Ile Thr Tyr Thr Phe His Phe Asp Glu Leu Phe Asn Lys Cys Leu Tyr
 195 200 205
 Glu Phe Thr Tyr Asn His Asn Tyr Asn Ile Ile Lys Ser Cys Val Ile
 210 215 220
 Leu Lys Ile Asn Phe Ile Ile Ile Leu Ser Tyr Thr Leu Ser Ser Phe
 225 230 235 240
 Phe Leu Tyr Ile Phe Ser Ser Ser Phe Phe Asp Ala Leu Phe Met Pro
 245 250 255
 Leu Phe His Phe Phe Asn Ile Phe Ser Tyr Thr Phe Val Leu Ile Thr
 260 265 270
 Met Ser Gln Tyr Asn Pro Ser Tyr Asp Tyr Leu Asn Tyr Phe Asn Arg
 275 280 285
 Ser Lys Asn Ile Val Ile Val Leu Leu Val Phe Ile Tyr Leu Val Lys
 290 295 300
 Ile Lys Lys
 305

<210> 157

<211> 332

<212> PRT

<213> Plasmodium falciparum

<400> 157

Met Ile Val Thr Ile Cys Ile Leu Ile Thr Ile Leu Val Tyr Ile Leu
 1 5 10 15
 Leu Phe Tyr Ile Asn Asp Phe Tyr Ile Leu Asn Ile His Lys Ile Ser
 20 25 30
 Ile Glu His Ile Leu Phe Phe Leu Ile Ile Thr His Val Ser Ile Asp
 35 40 45
 Phe Ile Asp Ile Ser Gln Phe Phe Tyr Ser Ser Tyr Ser Tyr Phe Phe
 50 55 60
 Leu Tyr Tyr Phe Arg Leu Lys Asp Glu Ile Asn Ile Phe Lys Asp Thr
 65 70 75 80

His Ile Phe Ser Asp Lys Ile Leu Asp Lys Asn Lys Ile Val His Phe
 85 90 95
 Tyr Asn Leu Thr Ile Asn Ile Tyr Glu Val Ile Phe Ile Thr Phe Gly
 100 105 110
 Ile Leu Ile Ala Leu Asn Ile Ser Leu His Ala Tyr Ser Phe Pro Asn
 115 120 125
 Tyr Ser Tyr Glu Glu Ile Pro Ser Ile Leu Lys Ile Lys Asn Lys Asn
 130 135 140
 Asn Ile Asn Ser Asn Asn Ile Asn Ser Asn Asn Ile Asn Ser Asn Asn
 145 150 155 160
 Ile Asn Ser Asn Asn Ile Asn Ser Asn Asn Ile His Cys Asn Asn Asn
 165 170 175
 Ile His Cys Asn Asn Ile His Cys Asn Asn Asn Ile Cys Ser Lys Phe
 180 185 190
 Ile Lys His Lys Pro Ser Leu His Asn Asn Asn Pro Asn Asn Lys Glu
 195 200 205
 Glu Asp Ile Tyr Lys Ile Tyr Ser Asn Lys Tyr Asn Thr His Asn Asp
 210 215 220
 Gln Asp Thr Tyr Asn Thr Tyr Asn His Ile Lys Thr Ser Asn Met Ile
 225 230 235 240
 Asn Ile Lys Gln Tyr Lys Asn Asp Ser Ser Ala Tyr Asn Asn Ser Tyr
 245 250 255
 Lys Tyr Ile Asn Ser Pro Tyr Tyr Tyr Asn Asn Asn Ser Ser Asn Asn
 260 265 270
 Asn Thr Ser Asn Asn Ile Thr Ile Asn Lys Gln Lys Glu Phe Ser Lys
 275 280 285
 Val Ala Gly Asp Ala Met Ser Cys Leu Lys Tyr Ile Ser Ile Tyr Ser
 290 295 300
 Phe Leu Leu Thr Asp Ile Ser Phe Phe Leu Ser Arg Leu Leu Leu Phe
 305 310 315 320
 Phe Met Leu Gln Thr Val Ser Cys Asn Val Lys Lys
 325 330

<210> 158

<211> 551

<212> PRT

<213> Plasmodium falciparum

<400> 158

Met Lys Ala Ser Gly Leu Cys Gln Gln Leu Asn Lys Cys Met Trp Asn
 1 5 10 15
 Gln Leu Val Val Ser Arg Lys Cys Ile Lys Lys Phe Val Cys Asn Tyr
 20 25 30
 Ser Thr Lys Ile Ser Pro Ile Glu Ile Ser Lys Ile Leu Glu Lys Lys
 35 40 45
 Phe Glu Ser Phe Asn Phe Lys Thr Ser Ser Asn Glu Val Gly Tyr Val
 50 55 60
 Leu Ser Val Gly Asp Gly Ile Cys Arg Ala Tyr Gly Leu Asn Asn Val
 65 70 75 80

Lys Ser Ser Glu Leu Val Glu Ile His Asn Glu Asp Asp Lys Gly Ser
 85 90 95
 Val Thr Tyr Gly Met Ala Thr Asn Leu Glu Tyr Asp Asn Val Gly Ile
 100 105 110
 Val Ile Phe Gly Asn Asp Arg Asn Ile Lys Glu Gly Asp Val Ile Lys
 115 120 125
 Arg Thr Asn Arg Ile Ile Asp Val Asn Val Gly Tyr Glu Leu Leu Gly
 130 135 140
 Arg Val Val Asp Ala Leu Gly Asn Cys Ile Asp Gly Glu Lys Asn Val
 145 150 155 160
 Val Thr Lys Glu Arg Arg Lys Ile Glu Ile Lys Ala Pro Gly Ile Ile
 165 170 175
 Ala Arg Lys Ser Val Asn Glu Ser Ile Ile Thr Gly Ile Lys Cys Ile
 180 185 190
 Asp Ser Leu Val Pro Ile Gly Arg Gly Gln Arg Glu Leu Ile Ile Gly
 195 200 205
 Asp Arg Gln Thr Gly Lys Thr Ala Ile Ala Ile Asp Ala Ile Ile His
 210 215 220
 Gln Lys Asn Ile Asn Asp Asn Val Leu Asn Asn Asn Glu Lys Val Tyr
 225 230 235 240
 Cys Ile Tyr Val Ala Ile Gly Gln Lys Lys Ser Asn Ile Ala Lys Leu
 245 250 255
 Val Asn Leu Leu Lys Lys Tyr Asp Ala Leu Lys Tyr Thr Ile Ile Val
 260 265 270
 Asn Ser Ser Ala Ser Asp Ala Ser Pro Leu Gln Phe Leu Ala Pro Tyr
 275 280 285
 Thr Gly Cys Ala Met Ala Glu Phe Phe Arg Asp Asn Gly Lys His Ala
 290 295 300
 Leu Ile Ile Phe Asp Asp Leu Ser Lys Gln Ala Val Ala Tyr Arg Gln
 305 310 315 320
 Leu Ser Leu Leu Leu Arg Arg Pro Pro Gly Arg Glu Ala Tyr Pro Gly
 325 330 335
 Asp Ile Phe Tyr Ile His Ser Lys Leu Leu Glu Arg Ser Ser Lys Leu
 340 345 350
 Asn Asp Asn Leu Lys Gly Gly Ser Leu Thr Ala Leu Pro Ile Ile Glu
 355 360 365
 Thr Leu Asn Asn Asp Val Ser Ala Tyr Ile Pro Thr Asn Val Ile Ser
 370 375 380
 Ile Thr Asp Gly Gln Ile Phe Leu Glu Ser Glu Leu Phe Tyr Lys Gly
 385 390 395 400
 Ile Ile Pro Ala Ile Asn Val Gly Leu Ser Val Ser Arg Ile Gly Ser
 405 410 415
 Ser Ala Gln Tyr Asn Cys Met Lys Lys Leu Ala Ser Ser Met Lys Leu
 420 425 430
 Glu Leu Ala Gln Phe Arg Glu Ile Val Ala Phe Ser Gln Phe Gly Ser
 435 440 445
 Asp Leu Asp Val Ser Thr Lys Lys Leu Ile Glu Lys Gly Lys Ile Leu
 345

450 455 460
 Thr Glu Ile Leu Lys Gln Lys Gln Tyr Ser Pro Val Asn Ile Ser Tyr
 465 470 475 480
 Gln Ile Cys Leu Ile Tyr Ala Ala Thr Lys Asp Tyr Leu Leu Asn Leu
 485 490 495
 Pro Ile Glu Lys Val Gln Asp Phe Glu Thr Lys Tyr Phe Asp Tyr Leu
 500 505 510
 Asp Asn Asn Tyr Leu Asp Val Leu Lys Lys Ile Gln Ser Asn Cys His
 515 520 525
 Leu Ser Glu Val Glu Asp Gln Ile Lys Glu Ser Ile Gln Lys Phe Leu
 530 535 540
 Glu Leu Tyr Lys Asn Glu Ala
 545 550

<210> 159
 <211> 1817
 <212> PRT
 <213> Plasmodium falciparum

<400> 159
 Met Ser Ser Leu Leu Arg Ser Phe Lys Asn Leu Pro Arg Val Lys Leu
 1 5 10 15
 Lys Ile Lys Arg Asn Glu Glu Tyr Glu Arg Asn Leu Asn Asn Leu Ala
 20 25 30
 Asn Leu Ser Asn His Lys Lys Leu Ile Arg Ile Asp Ile Asn Gly Lys
 35 40 45
 Val Lys Lys Cys Ser Arg Tyr Phe Phe Asn Lys Asn Lys Tyr Ile Tyr
 50 55 60
 Ile Asn Asn Ile Glu Asp Met Lys Arg Phe Asp Glu Thr Lys Asn Ile
 65 70 75 80
 Asn Ile Asn Lys Asn Ile Asn Lys Lys Asn Asn Ile Asn Glu Lys Asn
 85 90 95
 Asn Ile Asn Val Lys Tyr Asp Ile Tyr Asn Ile His Asn Asn Thr Phe
 100 105 110
 Asp Ile His Arg Asn Tyr Gln Cys Lys Lys Gly Asn Ile Lys Asn Asp
 115 120 125
 Asn Ile Leu His Ile Asp Lys Lys Glu Lys Lys Lys Glu Glu His Gln
 130 135 140
 Ser Phe Lys Lys Lys Arg Lys Glu Glu Gln Lys Tyr Asn Asn Phe Ile
 145 150 155 160
 Ser Thr Tyr Asn Leu Thr Gln Asp Glu Ile Ile Tyr Met Arg Phe Ile
 165 170 175
 His Lys Ile Lys Ile Lys Asn Met Phe Ala Leu Ile Asn Asn Ile Arg
 180 185 190
 Lys Asn Ile Tyr Ile Asn Lys Tyr Gln Ala Asn Val Ile Leu Asn Cys
 195 200 205
 Ile Tyr Lys Tyr Leu Arg Ile His Cys Tyr Thr Leu Ser Lys Glu Glu
 210 215 220
 Phe Phe Phe Phe Val Tyr Ile Phe Pro Gln His Val Lys Tyr Ser Ser

225	230										235					240				
Lys Val Leu Ser Tyr 245	Leu Ile Asn Leu Leu Gln Asp Arg His Arg Ile 250 255																			
Arg Asp Ser Thr Gln Met Asn Val Cys Tyr Asn Glu Met Lys Lys Asp 260 265 270																				
Asn Asp Asp Asp Lys Asn Lys His Lys Asp Asn Asn Asn Asn Asn Asn 275 280 285																				
Asn Asn Lys Asn Lys His Lys Asp Asn Asn Lys Asn Lys His Lys Asp 290 295 300																				
Asn Asn Asn Asn Asn Asn Lys Asn Lys His Ser Asp His Leu Ile Ser 305 310 315 320																				
Asn Leu Tyr Asp Asn His Gln Asn Lys His Ser Asp His Leu Ile Ser 325 330 335																				
Asn Leu His Asp Glu Glu Asp Asn Tyr Phe Cys Thr Asn Leu Thr Met 340 345 350																				
Ser Gln Cys Ile Asn Leu Ile Cys Glu Ile Asn Leu Tyr Tyr Leu Asn 355 360 365																				
Ile Ser Ile Lys Lys Leu Tyr Phe Asp Tyr Leu Asn Lys Tyr Met Lys 370 375 380																				
His Ile Lys Leu Glu His Ile Phe Glu Leu Phe Thr Glu Gly Cys Tyr 385 390 395 400																				
Leu Phe Leu Leu Pro Asn Glu Lys Ile Lys Ser Asn Asn Ile Tyr Thr 405 410 415																				
Pro Asn Ile Phe Leu Lys Lys Leu Lys Asn Tyr Ile Thr Ser Asn Asp 420 425 430																				
Phe Val Ile His Ile Asn Asp Arg Thr Leu Asn Arg Tyr Ile Lys Phe 435 440 445																				
Leu Ser Tyr His Cys Ser Asn Asn Ile Tyr Val His Ile Leu Phe Asn 450 455 460																				
Asp Leu Tyr Ile Thr Leu His Lys Lys Ile Phe Ile Asn Asn Tyr Asp 465 470 475 480																				
Met Leu Ile Lys His Tyr Lys Ser Thr Ala Asp His Ile Leu Tyr Leu 485 490 495																				
Thr Asn Lys Asn Glu Asn Leu Asn Tyr Leu Asn Thr Ile Leu Leu Asn 500 505 510																				
Asn Tyr Tyr Ser Leu Tyr Asn Lys Lys Glu Asn Asn Glu Lys Arg Gln 515 520 525																				
Ser Leu Glu Asn Leu Lys Val Lys Ile Phe Pro Ser His Leu Asn Tyr 530 535 540																				
Lys Gln His Thr Thr Asn Lys Asn Val Asn Asp Pro Asn Gln Gln His 545 550 555 560																				
Lys His Asp Lys Asp Asp Ser Tyr Asp Asn Thr Tyr Glu Gln Met Lys 565 570 575																				
Asn Asn Lys Asn Lys Ile Tyr Pro Asn Glu Tyr Ile Thr Thr His Ile 580 585 590																				
Leu Gln Asn Asn Tyr Glu Gln Asn Leu Tyr Ser Phe Gln Lys Lys Asp 595 600 605																				

Asp Thr Asn Ile Asn Asn Ile Phe Asp Leu His Lys Arg Glu Gln Ile
 610 615 620
 Tyr Glu Tyr Glu Lys Glu Asn Glu Ser Ser Asp Ile Phe Arg Asp Ser
 625 630 635 640
 Tyr Lys Arg Lys Ile Lys Glu Glu Lys Lys Lys Lys Asn Ile Tyr Lys
 645 650 655
 Tyr Glu Asp His Pro Leu Asn Lys Glu Lys Lys Lys Lys Lys Lys Phe
 660 665 670
 Phe Tyr Ile Asn Tyr Glu Lys Gly Asp Asp Lys Asn Asp Asn Asp Leu
 675 680 685
 Tyr Tyr Asn Asn Ile Tyr Ser Lys Asn Leu Glu Asn Ile Gln Asn Lys
 690 695 700
 Asn Tyr Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 705 710 715 720
 Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 725 730 735
 Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 740 745 750
 Phe Asp Lys Tyr Asn Ile Pro Cys Thr Asn Thr Asn Leu Ser Leu Leu
 755 760 765
 Tyr Asp Lys Glu Lys Leu Phe Leu Phe Thr Tyr Ala Tyr Asp Lys Ile
 770 775 780
 Gln Thr Tyr Thr Tyr Glu Glu Leu Lys Ser Lys Tyr Lys Ile Ser Thr
 785 790 795 800
 Lys Ile Val Asp Arg Asn Ile Lys Met Phe Leu Lys Phe Leu Lys Asn
 805 810 815
 Tyr Asn Asn Asn Glu Asn Thr Tyr Val Asp Asn Ile Ile Ser Lys Lys
 820 825 830
 Asn Ile Phe His Leu Leu Ala Ser Met Lys Asn Lys Val Thr Asn Lys
 835 840 845
 Thr Asn Thr His Lys Asp Ile Tyr Gln Phe Ile His Ser Trp Tyr His
 850 855 860
 Ile Lys Leu Ala Asp Gln Asn Lys Glu His Ser Phe Gln Asp Asp Lys
 865 870 875 880
 Tyr Leu Ile Asn Asn Leu Tyr Glu Lys His Lys Val Gln His Asn Thr
 885 890 895
 Met Thr His His Ile Ile Lys Met Glu Asp Lys Lys Gly Asp Ile His
 900 905 910
 Leu Met Glu Asn Asn Asn Met Leu Leu Asn Asn Asn Met Ser Leu Asn
 915 920 925
 Asn Asn Met Ser Leu Asn Asn Ser Ile Pro Leu Asn Asn Ser Ile Pro
 930 935 940
 Leu Asn Asn Ser Ile Pro Leu Asn Asn Ser Ile Pro Leu Asn Asn Ser
 945 950 955 960
 Ile Pro Leu Asn Asn Ser Ile Pro Leu Asn Asn Ser Ile Ser Leu Asn
 965 970 975

Ser Cys Ile Ser Leu Tyr Asn Ser Ile Ser Leu Tyr Ser Asn Lys Asn
 980 985 990
 Thr Ser Phe Asn His Leu Tyr Asn Asn Ile Tyr Asp Thr Cys Phe Ile
 995 1000 1005
 Gln Asn Asn Tyr Ile Ser Asn Gln Gln Val Gln Asn Tyr Lys Asn Glu
 1010 1015 1020
 Lys Asn Thr Asn Met Glu His Tyr Asn Glu Lys Lys Leu Phe Ile Tyr
 1025 1030 1035 1040
 Pro Ile Tyr Tyr Leu Glu Asp Lys Asn Tyr Phe Leu Asn Val Val Asn
 1045 1050 1055
 Asn Ile Phe Phe Asn Lys Asn Tyr Asn Asn Thr Phe Phe Tyr Thr Cys
 1060 1065 1070
 Gln Ile Asn Ile Leu Ser Lys Gly Leu Tyr Tyr Phe Ile Asn Tyr Tyr
 1075 1080 1085
 Thr Leu Leu Ile Ser Ser Asn Tyr Lys Ala Glu Glu Ile Lys Thr Asp
 1090 1095 1100
 Asp Asn Lys Cys Asn Ile Asn Asn Asn Asn Asn Asn Asn Asn Asn
 1105 1110 1115 1120
 Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Tyr
 1125 1130 1135
 Asn Asn Asn Asn Tyr Asn Asn Asn Asn Val Tyr Pro Leu Ile Asn His
 1140 1145 1150
 Phe Thr Thr Thr Phe Tyr Glu Met Val Thr Tyr Leu Leu Lys Asn Ile
 1155 1160 1165
 Tyr Arg Ile His Ile Ser Lys Phe Phe Tyr Ile Phe Val Ala Leu Ser
 1170 1175 1180
 Lys Phe Phe Leu Met Asn Ser Tyr Gln Gln Ser Asn Thr Asn Lys Arg
 1185 1190 1195 1200
 Glu Asn Ser Ile His Met Glu Asn Val Leu Tyr Ile Leu Tyr Ile Ile
 1205 1210 1215
 Arg Lys Lys Gln Tyr Glu His Val Lys Ser Ile Leu Tyr Asp Lys Ser
 1220 1225 1230
 Asn Glu Asn Tyr Phe Arg Phe Asn Glu Asn Lys Asp Ile Lys Met Glu
 1235 1240 1245
 Asn Thr Asn Met Leu Tyr Asn Ile Ile Leu Asn Asn Phe Ser Thr Glu
 1250 1255 1260
 Asp His Asp Glu Phe Met Thr Leu Gln Lys Asn Asn Glu Asp Asn Asn
 1265 1270 1275 1280
 Lys Met Ile Ile Asp Asn Ile Asn Asn Val Asp Asn Ile Asn Asp Leu
 1285 1290 1295
 Ile Lys Ser His His Cys Asp Asn Asn Lys Lys Glu Asp Thr Ser Ser
 1300 1305 1310
 Leu His Asn Lys Leu Tyr Asn Gly Leu His Phe Leu Ile Met Phe Leu
 1315 1320 1325
 Asn Asn Tyr Leu Asp Asn Thr Lys His Phe Lys Ile Asn His Phe Leu
 1330 1335 1340
 Ser Ser Leu Phe Tyr Ile Asn Lys Ile Ile Pro Pro Asn Met Lys His
 349

1345	1350	1355	1360
Met Tyr His Leu Glu Thr Tyr Leu His Lys Asn His Lys Ile Tyr Lys	1365	1370	1375
Asn Lys Phe Phe Tyr Ile Tyr Asn Gly Leu Asp Leu Leu Lys Lys Ser	1380	1385	1390
Tyr Leu Val His Ile Lys Lys Leu Tyr Ile Asn Ser Tyr Ile Lys Ser	1395	1400	1405
Tyr Asn Asn Lys Lys Lys Asn Asn Asn Val Asn Gly Asp Val Tyr Asn	1410	1415	1420
Asn Phe Met Tyr Lys Tyr Asn Ile Tyr Asp Asn Ile Asp Tyr Ile Phe	1425	1430	1435
Ile Lys Lys Lys Asn Leu Phe Cys Tyr Thr Asn His Leu Ser Leu Leu	1445	1450	1455
Tyr Phe Thr Tyr Ile Tyr Ser Leu Asn Lys Phe Tyr Tyr Cys Thr Leu	1460	1465	1470
Tyr Tyr Asn Ile Ser Lys Cys Phe Tyr Tyr Lys Ile Asn Ile Glu Asn	1475	1480	1485
Ile His Phe Lys Asn Lys Ile Ile Leu Phe Phe Ile Phe Thr Gln Cys	1490	1495	1500
Lys Tyr Ile Tyr Ile Lys Phe Phe Arg Leu Leu Val Gln Ser Ile Phe	1505	1510	1515
Ser Ser Ser Glu Phe Gln Lys Val Gly Lys Leu Ser Leu Tyr Ile Leu	1525	1530	1535
Ser Asn Ile Ile Leu Leu Leu Val Lys Asn Ser Arg Met Lys Leu Asn	1540	1545	1550
Ile Lys Lys Lys Lys Ile Ile Lys Asn Ile Ser Lys His Ile Tyr Ser	1555	1560	1565
Asn Asn Glu Phe Ile Asn Asn Asn Lys Ile Lys Lys Ile His Thr Asn	1570	1575	1580
Asn Asn Ser Met Ser Lys Asn Leu Phe Ile Cys Asn Lys Leu Leu Asn	1585	1590	1595
Ile Gln Trp Asn Tyr Ile Phe Pro Met Asp Leu Phe Ile Ser Ser Asn	1605	1610	1615
Leu Ser His Glu Thr Glu Leu Ile Ile Asn Lys Leu Glu Gln Asn Ile	1620	1625	1630
Leu Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn	1635	1640	1645
Asn Lys His Asn Asn Asn Asn Ile Arg Gly Lys Lys Asn Tyr Asp Tyr	1650	1655	1660
Gln Asn Ile Glu Lys Leu Phe Tyr Ser Lys Glu Thr His Met Ile Asn	1665	1670	1675
Lys Met Asn Ile Leu Lys Ile Lys Asp Ile Lys Asn Ala Gln Asn Asp	1685	1690	1695
Glu Cys Ser Gln Asn Ile Lys Tyr Ile Lys Asn Ser Ile Ile Asn Leu	1700	1705	1710
Asn Asn Phe Lys Asn Glu Leu Phe Thr His Ile Pro Phe Leu Ile Lys	1715	1720	1725

Gln Tyr Lys Gln Tyr Ile Ile Val His Glu Lys Asn Lys Cys Ile Asn
 1730 1735 1740

Asn Lys Val Gln Asn Phe Asn Gln Lys Asn His Leu Ile Ser Gln Thr
 1745 1750 1755 1760

Phe Asn Lys Ile Asp Glu Ser Ser Phe Ile Tyr Phe Asp Asp Asp Ile
 1765 1770 1775

Glu His Glu Ile Phe Thr Leu Cys Gln Asn Phe Leu Ser Tyr Asp Tyr
 1780 1785 1790

Val Thr Thr Asn Phe Cys Ile Ser Lys Lys Ser Leu Tyr Tyr Asp Leu
 1795 1800 1805

Leu Met Tyr Leu Lys Gly Thr Asn Phe
 1810 1815

<210> 160
 <211> 141
 <212> PRT
 <213> Plasmodium falciparum

<400> 160
 Met Leu Asn Phe Ile Leu Leu Gln Asn Arg Gln Gly Lys Thr Arg Phe
 1 5 10 15

Ser Lys Trp Tyr Ile Asn Cys Asn Glu Lys Lys Gln Lys Lys Ile Glu
 20 25 30

Arg Asp Ile Asn Lys Ile Leu Ile Asn Arg Ser Arg Ser Tyr Ala Asn
 35 40 45

Ile Phe Val Tyr Glu Asn Phe Lys Ile Val Tyr Arg Leu Tyr Ala Gly
 50 55 60

Leu Tyr Phe Val Val Cys Ile Glu Asn Glu Asn Glu Leu Tyr Ile Leu
 65 70 75 80

Glu Phe Ile His Phe Met Ala Gln Leu Leu Asp Thr Phe Phe Thr Asn
 85 90 95

Val Cys Glu Leu Asp Leu Leu Phe Asn Phe His Phe Leu Tyr Tyr Phe
 100 105 110

Phe Asp Asn Ile Ile Leu Gly Gly Tyr Ile Tyr Glu Ile Asn Arg Asn
 115 120 125

Ile Ile Leu Asp Lys Ile Asn Lys Ile Lys Lys Leu Ile
 130 135 140

<210> 161
 <211> 106
 <212> PRT
 <213> Plasmodium falciparum

<400> 161
 Met Asp Asn Glu Tyr Lys Lys Phe Ile Glu Ile Arg Lys Arg Glu Asn
 1 5 10 15

Lys Ile Gly Asp Phe Lys Ile Thr Asn Ile Asp Ile Asn Thr Phe Lys
 20 25 30

Lys Tyr Lys His Lys Asn Asn Pro Thr Phe Ser Thr Glu Phe Lys Ile
 35 40 45

Phe Ile Thr Gly Ile Ile Ile Ser Met Trp Cys Val Phe Ala Ile Tyr

50 55 60
 Leu Thr Ile Arg Ile Met Ser Pro Asp Asn Phe Asp Trp Val Glu Asp
 65 70 75 80
 Glu Arg Lys Arg Leu Glu Asp Ala Lys Lys Lys Ile Ile Leu Ile Lys
 85 90 95
 Glu Lys Asn Met Glu Lys Ser Ile Ala Glu
 100 105

 <210> 162
 <211> 524
 <212> PRT
 <213> Plasmodium falciparum

 <400> 162
 Met Gly Cys Ser Gln Ser Ser Asn Val Lys Asp Phe Lys Thr Arg Arg
 1 5 10 15
 Ser Lys Phe Thr Asn Gly Asn Asn Tyr Gly Lys Ser Gly Asn Asn Lys
 20 25 30
 Asn Ser Glu Asp Leu Ala Ile Asn Pro Gly Met Tyr Val Arg Lys Lys
 35 40 45
 Glu Gly Lys Ile Gly Glu Ser Tyr Phe Lys Val Arg Lys Leu Gly Ser
 50 55 60
 Gly Ala Tyr Gly Glu Val Leu Leu Cys Arg Glu Lys His Gly His Gly
 65 70 75 80
 Glu Lys Ala Ile Lys Val Ile Lys Lys Ser Gln Phe Asp Lys Met Lys
 85 90 95
 Tyr Ser Ile Thr Asn Lys Ile Glu Cys Asp Asp Lys Ile His Glu Glu
 100 105 110
 Ile Tyr Asn Glu Ile Ser Leu Leu Lys Ser Leu Asp His Pro Asn Ile
 115 120 125
 Ile Lys Leu Phe Asp Val Phe Glu Asp Lys Lys Tyr Phe Tyr Leu Val
 130 135 140
 Thr Glu Phe Tyr Glu Gly Gly Glu Leu Phe Glu Gln Ile Ile Asn Arg
 145 150 155 160
 His Lys Phe Asp Glu Cys Asp Ala Ala Asn Ile Met Lys Gln Ile Leu
 165 170 175
 Ser Gly Ile Cys Tyr Leu His Lys His Asn Ile Val His Arg Asp Ile
 180 185 190
 Lys Pro Glu Asn Ile Leu Leu Glu Asn Lys His Ser Leu Leu Asn Ile
 195 200 205
 Lys Ile Val Asp Phe Gly Leu Ser Ser Phe Phe Ser Lys Asp Asn Lys
 210 215 220
 Leu Arg Asp Arg Leu Gly Thr Ala Tyr Tyr Ile Ala Pro Glu Val Leu
 225 230 235 240
 Arg Lys Lys Tyr Asn Glu Lys Cys Asp Val Trp Ser Cys Gly Val Ile
 245 250 255
 Leu Tyr Ile Leu Leu Cys Gly Tyr Pro Pro Phe Gly Gly Gln Asn Asp
 260 265 270
 Gln Asp Ile Ile Lys Lys Val Glu Lys Gly Lys Tyr Tyr Phe Asp Phe

275 280 285
 Asn Asp Trp Lys Asn Ile Ser Glu Glu Ala Lys Glu Leu Ile Lys Leu
 290 295 300
 Met Leu Thr Tyr Asp Tyr Asn Lys Arg Ile Thr Ala Lys Glu Ala Leu
 305 310 315 320
 Asn Ser Lys Trp Ile Lys Lys Tyr Ala Asn Asn Ile Asn Lys Ser Asp
 325 330 335
 Gln Lys Thr Leu Cys Gly Ala Leu Ser Asn Met Arg Lys Phe Glu Gly
 340 345 350
 Ser Gln Lys Leu Ala Gln Ala Ala Ile Leu Phe Ile Gly Ser Lys Leu
 355 360 365
 Thr Thr Leu Glu Glu Arg Lys Glu Leu Thr Asp Ile Phe Lys Lys Leu
 370 375 380
 Asp Lys Asn Gly Asp Gly Gln Leu Asp Lys Lys Glu Leu Ile Glu Gly
 385 390 395 400
 Tyr Asn Ile Leu Arg Ser Phe Lys Asn Glu Leu Gly Glu Leu Lys Asn
 405 410 415
 Val Glu Glu Glu Val Asp Asn Ile Leu Lys Glu Val Asp Phe Asp Lys
 420 425 430
 Asn Gly Tyr Ile Glu Tyr Ser Glu Phe Ile Ser Val Cys Met Asp Lys
 435 440 445
 Gln Ile Leu Phe Ser Glu Glu Arg Leu Arg Asp Ala Phe Asn Leu Phe
 450 455 460
 Asp Thr Asp Lys Ser Gly Lys Ile Thr Lys Glu Glu Leu Ala Asn Leu
 465 470 475 480
 Phe Gly Leu Thr Ser Ile Ser Glu Gln Met Trp Asn Glu Val Leu Gly
 485 490 495
 Glu Ala Asp Lys Asn Lys Asp Asn Met Ile Asp Phe Asp Glu Phe Val
 500 505 510
 Asn Met Met His Lys Ile Cys Asp Asn Lys Ser Ser
 515 520

<210> 163

<211> 273

<212> PRT

<213> Plasmodium falciparum

<400> 163

Met Phe Ile Asp Gln Gly Tyr Glu Lys Phe Val Thr Lys Ile Asn Asn
 1 5 10 15
 Glu Leu Val His Glu Met Asp Arg Ser Tyr Glu Tyr Ile Asn Leu Ser
 20 25 30
 Tyr Asp Lys Glu Gln Glu Lys Glu Tyr Val Asn Asn Tyr Leu Asn Asn
 35 40 45
 Tyr Ile Asp Pro Glu Lys Asn Asn Glu Ile Tyr Phe Ser Thr Asn Ser
 50 55 60
 Asp Thr Ile Ser Glu Val Asp Glu Thr Asn Tyr His Glu Lys Val Asn
 65 70 75 80
 Asn Lys Ser Ile Glu Gln Tyr Lys Asn Phe Glu Lys Asp Glu Ser Leu

<400> 164															
Met	Tyr	Leu	Ile	Met	Lys	Arg	Met	Leu	Ile	Asp	Glu	Cys	Glu	Ile	Lys
1				5					10					15	
Ile	Ile	Lys	Lys	Lys	Lys	Thr	Tyr	Leu	Ile	Leu	Pro	Ile	Phe	Ile	Asp
			20					25					30		
Ile	Ile	Lys	Ile	Leu	Asp	Val	Tyr	Asp	Glu	Ile	Ile	Lys	Lys	Thr	Asn
		35					40					45			
Ile	Glu	Pro	Leu	Ile	Lys	Leu	Tyr	Glu	Glu	Leu	Lys	Leu	Phe	Leu	Leu
	50					55					60				
Tyr	Phe	Phe	His	Lys	Leu	Leu	Tyr	Asn	Leu	Leu	Thr	Glu	Gln	Asp	Asn
65					70					75					80
Leu	Pro	Arg	Asn	Ile	Phe	Lys	Tyr	Leu	Gln	Ile	Asn	Asn	Asn	Ile	Ile
				85					90					95	
Tyr	Asn	Lys	Lys	Lys	Lys	Tyr	Asn	Asn	Leu	Leu	Ser	Tyr	Asn	Ser	Lys
			100					105					110		
Lys	Lys	Asp	Ser	Ser	Glu	Phe	Phe	Asn	Ser	Tyr	Tyr	Arg	Tyr	Thr	Asn
		115					120					125			
Ser	Ile	Asn	Glu	Asn	Val	Val	Phe	Leu	Ser	Phe	Phe	Glu	Asn	Phe	Tyr

130					135					140					
Phe 145	Phe	Asn	Thr	Phe	Thr 150	Asn	Asn	Gly	Gln	Ala 155	Ser	Ser	Ser	Phe	Pro 160
Ser	Leu	Ser	Phe	Ser 165	Phe	Asn	Ser	Ile	Gly 170	Ser	Ser	Ile	Glu	Ser	Asp 175
Glu	Gly	Asp	Met 180	Tyr	Lys	Asp	Thr	Asn 185	Val	Val	His	Asp	Lys 190	Met	Glu
Val	Tyr	Asn 195	His	Asn	Asn	Asn	Asn 200	Asn	Asn	Asn	Tyr	Ile 205	Tyr	Asp	Lys
Ser	Gly 210	Lys	Ala	Phe	Ser	Gln 215	Lys	Asn	Glu	Tyr	Glu 220	Asp	Ile	Ile	Ile
Thr 225	Lys	Asp	His	Thr	Ala 230	Leu	Asn	Asn	His	Glu 235	Tyr	Asp	His	Leu	Ser 240
Ser	Lys	His	Asp	Asp 245	Asn	Tyr	Asn	Asp	Asn 250	Asn	Asn	Asn	Asn	Asn	Asn 255
Cys	Asn	Asn	Asn 260	Cys	Asn	Asn	Tyr	Tyr 265	Asn	Asn	Ala	Ser	Leu 270	Met	Lys
Asn	Glu	Lys 275	Ser	Ser	Gln	Ile	Ile 280	Lys	Met	Tyr	Lys	Asn 285	Lys	Ile	Asp
Ile 290	Leu	Asn	Met	Gln	Tyr	Asn 295	His	Phe	Phe	Val	His 300	Arg	Cys	Lys	Asn
Glu 305	Gly	Lys	Cys	Ile	Leu 310	Leu	Ile	Lys	Ser	Tyr 315	Phe	Asn	Asp	Tyr	Leu 320
Cys	Ala	Leu	Val	Asn 325	Ser	Leu	Tyr	Ile	Tyr 330	Ser	Lys	Asp	Ile	Tyr 335	Ser
Ile	Lys	Asn	Phe 340	Asn	Ser	Lys	Gly	Glu 345	Gly	Lys	Asn	Lys	Trp 350	Lys	Asp
Lys	Asn 355	Glu	Asn	Asp	Gln	Asn	Gly 360	Asp	Asn	Ile	Ile	Asn 365	Asp	Asp	Asn
Ile 370	Ile	Asn	Asp	Asp	Asn	Ile 375	Ile	Asn	Asp	Asp	Asn 380	Ile	Ile	Asn	Asp
Asp 385	Asn	Val	Ile	Asn	Asp 390	Asp	Asn	Val	Ile	Asn 395	Gly	Asp	Asn	Ile	Ile 400
Asn	Asp	Asp	Asn	Val 405	Ile	Tyr	Asp	Asp	Asn 410	Ile	Ile	Asn	Asp	Asn 415	Asn
Ile	Ile	Asn	Asp 420	Asn	Asn	Ile	Ile	Asn 425	Asp	Asp	Asn	Ile	Ile	Asn	Asp 430
Asn	Asn	Ile 435	Ile	Tyr	Asp	Asn	Asn 440	Ile	Ile	Tyr	Asp	Asp 445	Ile	Leu	Asn
Asn	Lys 450	Asn	Leu	Ser	Lys	Tyr 455	Lys	Met	Lys	Asp	Val 460	Arg	Gly	Lys	Gln
Asn 465	Phe	Arg	Asn	Ser	Glu 470	Thr	His	Val	Ile	Tyr 475	Gln	Asn	Ser	Lys	Ser 480
Ser	Gln	Asn	Lys	Glu 485	Ser	Lys	Tyr	Ser	Thr 490	Ile	Met	Asn	His	Lys	Lys 495
Asp	Asp	Thr	Tyr 500	Ser	Phe	Lys	Thr	His 505	Lys	Arg	Asn	Asp	Val 510	His	Phe

Asn Ile Ile His Lys Gln Lys Ile Glu Glu His His Gly Asn Lys Glu
 515 520 525
 Lys Lys Glu Arg Lys Ile Ile Lys Lys Gln Asn Lys Ile Ile Ser Lys
 530 535 540
 Asn Lys Lys Glu Tyr Lys Lys Gly Lys Lys Lys Lys Lys Phe Gly Glu
 545 550 555 560
 Asn Tyr Ile Pro Ile Leu Asn Thr Leu Ile Ser Phe Ile Glu Val Ile
 565 570 575
 Tyr Lys Asn Val Phe Lys Lys Val Leu Ile Lys Ile Ser Lys Ser Lys
 580 585 590
 Ser Ile Asn Asp Leu Lys Leu Tyr Ser Tyr Ile Glu Lys Ile Tyr Glu
 595 600 605
 Tyr Asn Thr Tyr Tyr Cys Leu Lys Asn Arg Leu Lys Lys Phe Cys Phe
 610 615 620
 Thr Leu Phe Phe Ser Val Thr Leu Lys Asn Leu Ile Lys Cys Tyr Ile
 625 630 635 640
 Cys Lys Ile Lys Arg Glu Glu Leu Asn Lys Ser Asn Phe Glu Lys Phe
 645 650 655
 Gln Ser Thr Leu Ile Tyr Asp Thr Cys Ser Phe Ile Asn Ile Tyr Asn
 660 665 670
 Gln Leu Gly Gln Thr Asn Phe Lys Asp Ile Phe Arg Asn Lys Tyr Val
 675 680 685
 Asn Phe Leu Ile Tyr Ile Lys Asn Ile Leu Thr Leu Pro Tyr Asp Lys
 690 695 700
 Leu Leu Arg Val Pro Ile Lys Asn Lys Tyr Phe Phe Phe Tyr Ile Lys
 705 710 715 720
 Asn Lys Arg Ile Asp Ile Pro Phe Gln Lys Phe Phe Asn Glu Tyr Lys
 725 730 735
 Ile Lys Asn Glu Lys Ile Phe His Ala Asn Lys Asn Gly Lys Ser Leu
 740 745 750
 Leu Leu Asp Arg Tyr His Tyr Leu Leu Asn Glu Ala Lys Gly Asn Thr
 755 760 765
 Met Ser Cys Arg Asn Thr Ser Lys Ser Ser Leu Phe Phe Leu Lys Asn
 770 775 780
 Ser Asn Ser Met His Glu Lys Ile Tyr Asn Ile Leu Lys Thr Phe Asn
 785 790 795 800
 Pro Leu Asn Asn Leu Tyr Ser Lys Val Asn Glu Glu Asp Gln Glu Gly
 805 810 815
 Val Ile Asn Ser Tyr Asn Asn Asp Glu Phe Glu Asp Glu Tyr Thr Ser
 820 825 830
 Ile Lys Thr Tyr Asp Ser Lys Asn Asn Ile Tyr Met Asp Asn Tyr Asp
 835 840 845
 Glu Asn Glu Glu His Asn Lys Asp Asn Val Tyr Tyr Ser Ser Ile Ser
 850 855 860
 Ser Thr Ser Ser Ser Lys Thr Glu Thr Asn Ile Ser Asn Thr Asp Val
 865 870 875 880

Ser Thr Ser Ser Lys Ser Ser Cys Lys Tyr Arg Asn Lys Asp Ser Val
 885 890 895
 Asn Ser Ser Asp Ile Ile Ile Ser Ser Val Asp Asn Met Gly Asn Gln
 900 905 910
 Asp Asn Glu Gly Asn Lys Leu Cys Arg Asn Val Asn Lys Glu Val Asp
 915 920 925
 Leu Lys Lys Arg Lys Ser Ile Tyr Glu Glu Lys Lys Arg Asp Tyr Ile
 930 935 940
 Ser Cys Ser Gly Asp Asn Lys Asn Asp Asp Asp Lys Asn Asp Asp Asn
 945 950 955 960
 Lys Asn Asp Asp Asp Lys Asn Asp Asp Asp Lys Asn Asp Asp Asp Lys
 965 970 975
 Asn Asp Asp Asp Lys Asn Asp Asp Asp Lys Asn Asp Asp Asp Lys Asn
 980 985 990
 Asp Asp Asp Asp Asp Asn Lys Asn Asp Asn His Asn Asn Asn Ile Ser
 995 1000 1005
 Ser Ser Ser Ser Ser Cys Cys Ser His Phe Ser Phe Ser Tyr Asn Thr
 1010 1015 1020
 Ile Asp Asp Lys Lys Lys Lys Gly Lys Lys Lys Lys Lys Glu Thr Glu
 1025 1030 1035 1040
 Ser Tyr Tyr Asp Val Ser Ser Met Asn Ser Asn Asp Leu Tyr Glu Glu
 1045 1050 1055
 Lys Gln Asn Ile Gln Thr Ile Phe Gln Arg Lys Lys Lys Ile Asn Asn
 1060 1065 1070
 Asn Asn Met Lys Asn Pro Phe Glu Met Asn Ile Asn Glu Lys Lys Asn
 1075 1080 1085
 Ser Ile Lys Val Tyr Ile Lys Asn Ser Asn Gln Gln Tyr Asp Arg Lys
 1090 1095 1100
 Ile Leu Leu Leu Lys Asp Asp Lys Ile Tyr Phe Tyr Asn Ser Glu Tyr
 1105 1110 1115 1120
 Ser Ile Thr Tyr Asp Ser Phe Tyr Phe Leu Met Glu Ile Lys Lys Ile
 1125 1130 1135
 Tyr Ser Cys Asp Gly Phe Phe Asp Ser Leu Ile Asn Ser Glu Lys Leu
 1140 1145 1150
 Ser Ser Val Asn Ser Ser Tyr Thr Ser Thr Glu Asp Asn Glu Phe Tyr
 1155 1160 1165
 Ser Arg Lys Lys Asp Thr Leu Ser Ser Glu Ser Glu Trp Gln Lys Cys
 1170 1175 1180
 Gly Tyr Asp Ala Lys Ile Val Arg Lys
 1185 1190

<210> 165

<211> 107

<212> PRT

<213> Plasmodium falciparum

<400> 165

Met Pro Lys Lys Arg Arg Asn Gly Gly Arg Ser Lys His Asn Arg Gly
 1 5 10 15

His Val Asn Pro Leu Arg Cys Ser Asn Cys Gly Arg Cys Val Pro Lys
 20 25 30

Asp Lys Ala Ile Lys Arg Phe Asn Ile Arg Asn Ile Val Asp Thr Ser
 35 40 45

Ala Gln Arg Asp Ile Lys Glu Ala Ser Val Tyr Ser Thr Phe Gln Leu
 50 55 60

Pro Lys Leu Tyr Ile Lys Gln Cys Tyr Cys Val Ser Cys Ala Ile His
 65 70 75 80

Ser Arg Phe Val Arg Val Arg Ser Arg Glu Gln Arg Arg Val Arg Lys
 85 90 95

Glu Thr Ala Lys His Val Asn Pro Ser Gln Leu
 100 105

<210> 166
 <211> 519
 <212> PRT
 <213> Plasmodium falciparum

<400> 166
 Met Leu Lys Tyr Ile Asn Lys Ser Lys Ala Leu Leu Leu Arg Lys Met
 1 5 10 15

Ser Thr Val Lys Asn Met Ser Lys Ser Asn Gln Leu Thr Lys Glu Ile
 20 25 30

Phe Met Ala Leu Lys Glu Lys Thr Ser Leu Leu Gln Lys Glu Lys Leu
 35 40 45

Tyr Ile Glu Pro Val Glu Glu Asn Leu Cys Leu Ser Asn Leu Glu Thr
 50 55 60

Ser Cys Pro Leu Thr Tyr Phe Thr Leu Met Tyr Lys Ser Arg Ile Asp
 65 70 75 80

Thr Asn Val Val Glu Leu Lys Val Val Pro Lys Cys Glu Gly Ser Lys
 85 90 95

Gly Thr Asn Asn Cys Met Leu Asn Asn Asn Asp Lys Thr Ser Phe Ser
 100 105 110

Thr Asp Lys Gly Phe Ile Asn Met Lys Glu Glu Gly Glu Glu Glu Lys
 115 120 125

Lys Asn Glu Thr Asn Met Asn Val Glu Asn Lys Lys Val Asp Phe Phe
 130 135 140

Asp Ser Phe Val Gln Leu Asn Ile Pro Val Leu Lys Asp Phe Glu Lys
 145 150 155 160

Val Phe Phe Tyr Lys His Ile Ile Glu Leu Ile Asp Ser Leu Ala Ala
 165 170 175

Asp Val Val Tyr Arg His Ser Ile Gly Val Tyr Lys Arg Asn Asp Lys
 180 185 190

Tyr Asn Phe Val Thr Val Leu Phe Asn Asn Leu Lys Thr Tyr Glu Lys
 195 200 205

Asn Val Phe His His Glu Phe Ser Phe Ala Leu His Asp Ser Tyr Pro
 210 215 220

Leu Thr Ile Asn Cys Tyr Ile Val Asn Ser Gly Thr Thr Ser Tyr Ile
 225 230 235 240

Leu Lys Leu Asp Phe Phe Gln Gln Asn Asn Leu Val Phe Asp Ile Tyr
 245 250 255
 Thr Thr Phe Val Asn Val Asn Cys Leu Thr Phe Lys Pro Gln Gln Val
 260 265 270
 Val Pro Val Leu Asn Ser Met Gln Asn Glu Lys Tyr Lys Gln Ile Lys
 275 280 285
 Ser Leu Cys Ser His Ile Lys Asp Val Gln Ser Leu Phe Asn Tyr Lys
 290 295 300
 Glu Val Lys Ser Lys Thr Leu His Pro Asn Asp Met Glu Ile Leu Ser
 305 310 315 320
 Asn Phe Phe Lys Lys Tyr Gln Thr Gln Asn Leu Gly Tyr Ile Lys Asn
 325 330 335
 Ile Asn Glu Tyr Thr Asn Ile Tyr Asp Asn Glu Gln Asn Glu Leu Val
 340 345 350
 Gln Asn Ser Asn Asp Asn Ile Leu Thr Ile Phe Asp Ser Ile Leu Asn
 355 360 365
 Leu Asn Asp Phe Ser Phe His Ala Gly Lys Val Gln Tyr Ala Cys Lys
 370 375 380
 Asp Thr Tyr Val Gln Ser Asn His Phe Ile Ser Ser Glu Phe Lys Asn
 385 390 395 400
 Ile His Asn Phe Thr Phe Gly Gly His Leu Ala Tyr Leu Ser Phe Cys
 405 410 415
 His Ala Met Val Val Ile Lys Lys Phe Leu Pro Lys Pro Ile Leu Met
 420 425 430
 Gln Ile Asn Ser Ile Gln Tyr Ile Leu Pro Val Pro Val Asn Ser Glu
 435 440 445
 Val Leu Tyr Lys Gly Lys Val Val Tyr Ser Asp Gln His Ser Ile Gln
 450 455 460
 Val His Val Ala Thr Tyr Cys Phe Asp Phe Lys Lys Ser Ala Tyr Tyr
 465 470 475 480
 Leu Thr Thr Ile Cys Asp Met Ser Phe Glu Asn Asn Ser Asp Ile Ser
 485 490 495
 Phe Val Pro Gln Ser Gln Glu Glu Phe Lys Leu Tyr Met Leu Gly Tyr
 500 505 510
 Ile Arg Ser Gln Ile Leu Pro
 515

<210> 167
 <211> 330
 <212> PRT
 <213> Plasmodium falciparum

<400> 167
 Met Glu Asn Ile Pro Trp Val Glu Lys Tyr Arg Pro Lys Arg Leu Asp
 1 5 10 15
 Asp Ile Val His Gln Asn Asn Ala Val Met Met Leu Lys Glu Val Val
 20 25 30
 Arg Thr Lys Asn Met Pro His Leu Ile Phe His Gly Pro Pro Gly Thr
 35 40 45

Gly Lys Thr Ser Ala Ile Asn Ala Leu Ala His Glu Leu Phe Gly Lys
 50 55 60
 Glu Asn Ile Ser Glu Arg Val Leu Glu Leu Asn Ala Ser Asp Asp Arg
 65 70 75 80
 Gly Ile Asn Val Val Arg Glu Lys Ile Lys Ala Tyr Thr Arg Ile Ser
 85 90 95
 Ile Ser Lys Asn Lys Ile His Ser Glu Thr Lys Glu Val Leu Pro Ser
 100 105 110
 Trp Lys Leu Val Val Leu Asp Glu Ala Asp Met Met Thr Glu Asp Ala
 115 120 125
 Gln Ser Ala Leu Arg Arg Ile Ile Glu Ile Tyr Ser Asn Val Thr Arg
 130 135 140
 Phe Ile Leu Ile Cys Asn Tyr Ile His Lys Ile Ser Asp Pro Ile Phe
 145 150 155 160
 Ser Arg Cys Ser Cys Tyr Arg Phe Gln Ser Ile Pro Ile Asn Ile Lys
 165 170 175
 Lys Glu Lys Leu Leu Tyr Ile Cys Gln Asn Glu Asn Ile Asp Ile Val
 180 185 190
 Asp Asp Ala Leu Glu Lys Ile Ile Glu Thr Thr Glu Gly Asp Leu Arg
 195 200 205
 Arg Ala Val Ser Ile Leu Gln Leu Cys Ser Cys Ile Asn Thr Lys Ile
 210 215 220
 Thr Leu Asn Ser Val Leu Asp Val Ser Gly Leu Pro Ser Asp Asn Ile
 225 230 235 240
 Val Tyr Lys Ile Ile Asp Ala Cys Lys Met Lys Asp Leu Lys Leu Val
 245 250 255
 Glu Lys Thr Val Gln Asp Ile Ile Glu Asp Gly Phe Asp Val Ala Tyr
 260 265 270
 Ile Phe Lys Ser Phe Asn Asn Tyr Phe Val Thr Asn Thr Glu Tyr Glu
 275 280 285
 Asp Ser Leu Lys Tyr Gln Ile Leu Leu Glu Leu Ser Arg His Asp Tyr
 290 295 300
 Arg Leu His Cys Gly Ala Thr Gln Tyr Ile Gln Leu Leu Ser Phe Ala
 305 310 315 320
 Ser Ser Val His Ser Leu Leu Asn Ser Val
 325 330

<210> 168

<211> 307

<212> PRT

<213> Plasmodium falciparum

<400> 168

Met Asp Ser Tyr Ile Glu Met Lys Ser Asn Val Leu Asn Lys Gln Tyr
 1 5 10 15
 Asp Ile Tyr Lys Ile Gln Asn Glu Tyr Asp Glu Thr Leu Ser Ile Tyr
 20 25 30
 Ser Ile Asp Asp Lys Tyr Ser Glu Asp Asp Met Leu Asn Asn Tyr Glu
 35 40 45

Lys Thr Ser Asp Ile Glu Gln Asp Tyr Met Tyr Gln Lys Ile Asn Thr
 50 55 60
 Asp Asn Leu Asp Asn Ser Glu Tyr Glu Asp Thr Asn Ile Gly Ile Phe
 65 70 75 80
 Asn Tyr Ile Tyr Glu Met Ile Thr Lys Lys Asn Glu Met Arg Lys Glu
 85 90 95
 Gln Met Lys Leu Thr Leu Phe Ser Ile Asn Arg Cys Val Asp Phe Phe
 100 105 110
 Asn Asp Phe Leu Phe Leu Ile Lys Val Phe Tyr Glu Met Lys Ile Ser
 115 120 125
 Glu Asn Ser Asn Met Leu Asn His Asn Ile Tyr Lys Leu Leu Phe Leu
 130 135 140
 Trp Leu Leu Phe Leu Tyr Val Thr Ser Phe Phe Thr Phe Tyr Phe Arg
 145 150 155 160
 Lys Tyr Tyr Ile Met Asn Leu Ile Pro Glu Lys His His Asn Leu Phe
 165 170 175
 Ser Leu Phe Lys Val Phe Asn Glu Ile Lys Thr Met His Pro Lys Asn
 180 185 190
 Ile Ser Val Leu Tyr Phe Tyr Asp Arg Ile Gln Arg Thr Tyr Ile Val
 195 200 205
 Ile Asn Lys Phe Phe Glu Asp Val Pro Gln Phe Leu Leu Cys Leu Leu
 210 215 220
 Tyr Ile Thr Leu Asn Gly Lys Asp Lys Phe Ile Ile Phe Asn Met Leu
 225 230 235 240
 Tyr Ser Ile Ile Tyr Phe Val Ile Asn Ala Ile Tyr His Gly Leu Asn
 245 250 255
 Tyr Pro Leu Met Gly Thr Leu Asn Leu Phe Phe Ser Thr Tyr Leu Leu
 260 265 270
 Glu Leu Tyr Ile Asn Lys Lys Lys Lys Lys Asn Ile Tyr Ile Tyr Ile
 275 280 285
 Tyr Ile Tyr Ile Cys Met Tyr Leu Phe Leu Cys Ile Tyr Ile Tyr Asn
 290 295 300
 Phe Ile Ile
 305

<210> 169
 <211> 807
 <212> PRT
 <213> Plasmodium falciparum

<400> 169
 Met Ala Val Glu Ser Lys Pro Asn Asn Ser Ser Lys Glu Lys Asn Glu
 1 5 10 15
 Glu Asn Asp Ile Ile Asn Lys Cys Asp Asp Ser Asn Lys Ile Asn Gly
 20 25 30
 Lys Glu Asn Ile Phe Ala Val Glu Lys Val Gly Ile Asn Glu Ser Gly
 35 40 45
 His Met Ser Asn Asp Asn Ile Asn Lys Asn Gln Glu Lys Asn Lys Lys
 50 55 60

Lys Lys Lys Lys Lys Asn Thr His Lys Lys Val Asn Ile Asn Asn Thr
 65 70 75 80
 His Ile Asn Ile His Thr Thr Asn Asp Lys Asn Asn Gly Gln Asp Ile
 85 90 95
 Asn Lys Pro Glu Val Ile Glu Arg Asp Asn Ile Ile Asn Ile Lys Asn
 100 105 110
 Asp Thr Asn Asn Ile Leu Asp Ser Ser Tyr Asn Glu Glu Gly Asn Glu
 115 120 125
 Asn Asn Arg Asn Asp Ile Asn Asn Asn Asn Asn Asn Asn Ile Asn
 130 135 140
 Ile Asn Asn Asn Asn Ile Asn Asn Ser Cys Ser Asn Asn Tyr Gly Leu
 145 150 155 160
 Lys Lys Lys Ile Thr Leu Leu Lys Arg Asn Asp Ile Lys Asp Glu Gly
 165 170 175
 Tyr Asn Asn Glu Asn Ile Thr Thr Leu Asn Asn Lys Asn Asn Leu Lys
 180 185 190
 Asn Asn Asn Asn Tyr Asn Asp Asn Arg Asn Asn Asn Asn Asn Lys
 195 200 205
 Asn Asn Ile Asn Asn Asn Asn Asn Asn Asn Cys Cys Ser Glu Lys Thr
 210 215 220
 Leu Glu Gln Arg Glu Lys Glu Tyr Asn Lys Ile Arg Ala Arg Ile Phe
 225 230 235 240
 Ser Asn Phe Asn Lys Lys Gln Lys Asn Val Gln Lys Thr Glu Gln Asn
 245 250 255
 Asn Leu Asn His Thr Tyr Leu Asn Asn Asn Ile Ile Asn Asn Ile Asn
 260 265 270
 Asn Gly Asp Asn Gln Tyr Ala Tyr Ile Asn Asn Phe Tyr His Ile Tyr
 275 280 285
 His Asn Asn Ser Tyr Asn His Ile Tyr Arg Gln Asn Asn Ile Pro Ile
 290 295 300
 Cys Asn Ile Asn Asn His Ala Pro Asn Ile Glu Lys Leu Asn Asn Pro
 305 310 315 320
 Tyr Tyr Tyr His Asp Asn His Ile Ala Tyr Thr Asn Tyr Met Tyr Ser
 325 330 335
 Thr Gln Asn Lys Met Asn Asn Met Lys Thr Lys Gln Ile Gly His Tyr
 340 345 350
 Gly Ile Asn Asn Glu Asp Asn Asn Asn Asn Asn Asn Ile Asn
 355 360 365
 Asn Asn Asn Asn Asn Ile Asn Asn Asn Asn Ile Asn Asn Asn Asn
 370 375 380
 Val Pro Leu Cys Ile Pro Gln Leu Asp Asn Tyr Asn Lys Thr Lys Asn
 385 390 395 400
 Asn Phe Asn Gln Gly Thr Asn Asn Phe Asn Gln Gly Thr Asn Asn Phe
 405 410 415
 Asn Lys Cys Thr Asn Asn Phe Asn Asn Ala Lys Asn His Ile Lys His
 420 425 430
 Asn Ile Asn Asn Thr Asn Lys Asn Ile Glu His Leu Asn Asn His Ser
 435 440 445

435					440					445					
Ile	Tyr	Asn	Phe	Val	Tyr	Pro	Glu	Asn	Lys	Asn	Ile	Tyr	Asp	Ala	Asn
450						455					460				
Gly	Asn	Leu	Ile	Asn	Asn	Asn	Ile	Ser	Tyr	Thr	Gln	Leu	Lys	Met	Asn
465				470						475					480
Asn	Asn	Ile	Asn	Phe	Asn	Ile	His	Met	Glu	Ser	Pro	Ile	Asn	Gln	Gln
				485					490					495	
His	Asn	Asn	Thr	Phe	Lys	Val	Asn	Asn	Asp	Thr	Asn	Phe	Phe	Asn	Glu
			500					505					510		
Pro	Thr	Asn	Lys	Met	Lys	Lys	Lys	Asn	Lys	Glu	Lys	Lys	Asn	Ile	His
		515					520					525			
Phe	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Lys	Cys	Leu	Tyr	Lys	Asp	
	530				535					540					
Ile	Asn	Gln	Asn	Asp	His	Asn	Asn	Ser	Ile	Ile	Asn	Thr	Asn	Gln	Asn
545				550						555				560	
Phe	Asp	His	Ile	Asn	Asn	Val	Lys	Asn	Thr	Glu	Gln	Asn	Leu	Gln	Lys
				565					570					575	
Lys	His	Asn	Lys	Met	Ser	Gln	Val	Ser	Lys	Gln	Ser	Asn	Asn	Lys	Asn
			580					585					590		
Asn	Lys	Asn	Asn	Ser	His	Leu	Lys	Lys	Gln	Ile	Asn	Ile	Asn	Thr	Asn
		595					600					605			
Asn	Asn	Met	Asp	Asn	Lys	Asn	Asn	Ser	His	Ile	Ser	Lys	Asn	Val	Ile
		610				615					620				
Val	Asp	Asp	Asn	Lys	Leu	Lys	Ser	Ser	His	Ala	Asp	Asn	Ser	Asn	Glu
625				630						635					640
Ile	Val	Thr	Lys	Gly	Lys	Lys	Lys	Lys	Asn	Thr	Asn	Lys	Lys	Lys	Lys
				645					650					655	
Ile	Asn	Asn	Ile	Asn	Ser	Val	Asn	Asn	Val	Asn	Asn	Ile	Asn	Ser	Met
			660				665						670		
Asn	Asn	Ile	Asn	Ser	Met	Asn	Asn	Ile	Ile	Ser	Met	Asn	Asn	Val	Asn
		675					680					685			
Asn	Met	Asn	Asn	Pro	Met	Tyr	Phe	Pro	Asn	Val	Asn	Ile	Gln	Lys	Asp
		690				695					700				
Asp	Ser	Asn	Ile	Ala	Leu	Leu	Tyr	Asn	Asn	Lys	Pro	Asn	Ile	Asp	Phe
705				710						715				720	
Asn	Asn	Phe	Gln	Leu	Asn	His	Ile	Asn	Asn	His	Met	Ile	Gln	Asn	Asn
				725					730					735	
Ile	Met	Thr	Asn	Asn	Val	Met	Leu	Asn	Asn	Asn	Leu	Thr	Thr	Ser	Asn
			740				745						750		
Phe	Asn	Tyr	Asn	Leu	Ile	Asn	Tyr	Ser	Tyr	Glu	Pro	Phe	Tyr	Glu	Glu
		755					760					765			
Asn	Leu	Met	Asn	Asp	Leu	Asp	Tyr	Cys	Arg	Asp	Ile	Ser	Leu	Tyr	Glu
		770				775					780				
Lys	Arg	Tyr	Asp	Arg	Gly	Asp	Asn	Leu	Gln	Gln	Asn	His	Lys	Arg	Tyr
785					790					795					800
Asp	Ile	Asp	Phe	Pro	Ser	Leu									
				805											

<210> 170
 <211> 351
 <212> PRT
 <213> Plasmodium falciparum

<400> 170

Met Asn Thr Lys Cys Leu Asn Lys Tyr Ile Ile Ile Ile Leu Leu Phe
 1 5 10 15
 Ser Leu Ile Ile Lys Arg Tyr Thr Ser Leu Asn Arg Tyr His Asn Val
 20 25 30
 Cys Lys Ile Lys Asn Gln Ser Cys Phe Leu Asn Pro Cys Thr His Lys
 35 40 45
 Asn Asn Asp Lys Arg Asn Ser Tyr Leu Tyr Thr His Tyr Thr Arg Asn
 50 55 60
 Asn Ser Ser Ile Asn Ile Arg Arg Asn Asn Phe Leu Asp Lys Gln Asn
 65 70 75 80
 Asp Asn Ile Ser Asp Tyr Ile Tyr Gly Leu Asn Ser Val Tyr Ala Val
 85 90 95
 Leu Lys Lys Asn Glu Arg Thr Ile Glu Glu Val Ile Asn Ile Lys Leu
 100 105 110
 Asn Arg Lys Ile His Lys Gln Asn Tyr Glu Tyr Ile Phe Asp Glu Leu
 115 120 125
 Lys Lys Arg Asn Val Ser Ile Gln Tyr Met Glu Lys Tyr Lys Met Asn
 130 135 140
 Glu Leu Val Gly Gly Phe Pro His Asn Asp Ile Ile Met Lys Thr His
 145 150 155 160
 Tyr Arg Tyr Met Asn Asn Tyr Lys Asp Phe Ile Lys Asn Ile Lys His
 165 170 175
 Leu Pro Asn Lys Asn Asn Ile Phe Ile Cys Leu His Asp Val Tyr Asp
 180 185 190
 Asn Met Asn Ile Gly Asn Val Cys Arg Ser Ile Phe Phe Phe Gly Gly
 195 200 205
 His Thr Ile Phe Leu Lys Lys Lys Lys Val Asn Glu Lys Lys Asn
 210 215 220
 Asn Val Lys Ile Asp Thr Pro Ile Leu His Ser Ser Val Gly Ser Ser
 225 230 235 240
 Glu Phe Leu Asn Phe Tyr His Ile Asn Asn Met Ala Asn Phe Met Asn
 245 250 255
 His Met Lys Leu Asn Gly Phe Thr Ile Tyr Ser Thr Ser Cys His Lys
 260 265 270
 Asn Asn Thr Ser Cys His Lys Tyr Ile Asn Leu Asn Asn Ile Lys Ile
 275 280 285
 Arg Glu Asn Glu Lys Ile Leu Ile Ile Leu Gly Asn Glu Ser Lys Gly
 290 295 300
 Leu Lys Glu Asp Ile Leu Glu Asn Ser Asp Tyr Cys Val Tyr Ile Asn
 305 310 315 320
 Asn Leu Ser Tyr Asn Glu Asn Thr Gln Phe His Ile Asp Ser Leu Asn
 325 330 335

Val Asn Asn Val Cys Ser Ile Met Leu Asn His Phe Tyr Ser Ile
 340 345 350

<210> 171
 <211> 562
 <212> PRT
 <213> Plasmodium falciparum

<400> 171

Met Lys Tyr Lys Asn Tyr Asn Thr Ala Thr Ile Leu Glu Asn Phe Asp
 1 5 10 15
 Lys Lys Leu Asn Lys Asn Tyr Lys Val Phe Asn Asn Glu Glu Ile Lys
 20 25 30
 Lys Met Asp Glu Glu Tyr Glu His Lys Ile Lys Lys Lys Glu Gln Leu
 35 40 45
 Lys Leu Gln Lys Lys Gln Ile Lys Lys Gln Glu His Lys Asn Glu Lys
 50 55 60
 Lys Lys Lys Asn Lys Asn Leu Asn Lys Lys His Asn Gln Asn Asn Thr
 65 70 75 80
 Asn Asn Ser Asp Asn Ser Phe His Asn Ser Asp Asn Asn Ile Asn Gln
 85 90 95
 Asn Gly Asn Tyr Thr Asn Asn Ser Asp Tyr Asn Ile Ile Asn Asn Asn
 100 105 110
 His Asp Asn Ile Asn Phe Ile His Gly Asn Lys Asn Lys Asn His Asp
 115 120 125
 Asn Ser Phe His Asn Asn Asp Asp Val Lys Asn Gly Glu Val Lys Asn
 130 135 140
 Leu Val Thr Asn Glu Glu Arg Glu Lys Gln Asn Val Thr Phe Glu Asp
 145 150 155 160
 Leu Asn Ile Cys Glu Glu Ile Leu Glu Ser Ile Lys Glu Leu Gly Trp
 165 170 175
 Lys Lys Pro Thr Glu Ile Gln Arg Glu Ile Leu Pro His Ala Phe Leu
 180 185 190
 Lys Lys Asp Ile Ile Gly Leu Ser Glu Thr Gly Ser Gly Lys Thr Ala
 195 200 205
 Cys Phe Ile Ile Pro Ile Leu Gln Asp Leu Lys Val Asn Lys Gln Ser
 210 215 220
 Phe Tyr Ala Leu Val Ile Ser Pro Thr Arg Glu Leu Cys Ile Gln Ile
 225 230 235 240
 Ser Gln Asn Phe Gln Ala Leu Gly Met Asn Leu Leu Ile Asn Ile Cys
 245 250 255
 Thr Ile Tyr Gly Gly Val Asp Ile Val Thr Gln Ser Leu Asn Leu Ala
 260 265 270
 Lys Lys Pro Asn Val Ile Val Ser Thr Pro Gly Arg Ile Leu Asp His
 275 280 285
 Leu Asn Asn Thr Lys Gly Phe Asn Leu Lys Asn Leu Lys Tyr Leu Val
 290 295 300
 Phe Asp Glu Ala Asp Lys Leu Leu Ser Gln Asp Phe Glu Ser Ser Ile
 305 310 315 320

Asn Lys Leu Leu Leu Ile Leu Pro Pro Asn Arg Ile Thr Phe Leu Phe
 325 330 335
 Ser Ala Thr Met Thr Lys Asn Val Ala Lys Leu Lys Lys Ala Cys Leu
 340 345 350
 Lys Asn Pro Val Lys Val Glu Val Ser Asn Lys Tyr Ser Thr Val Ser
 355 360 365
 Thr Leu Ile Glu Thr Tyr Ile Phe Leu Pro Leu Lys Tyr Lys Tyr Thr
 370 375 380
 Tyr Leu Ser Ser Leu Cys Phe His Tyr Gln Thr Arg Asn Ile Ile Ile
 385 390 395 400
 Phe Thr Asn Thr Cys Ala Thr Ala Gln Lys Leu Asn Phe Phe Cys Arg
 405 410 415
 Asn Leu Gly Leu Lys Ser Ile Cys Leu His Gly Lys Leu Thr Gln Asn
 420 425 430
 Gln Arg Leu Ser Ser Leu Asn Ser Phe Lys Val Asn Lys Tyr Asn Ile
 435 440 445
 Leu Ile Ser Thr Gln Val Gly Ala Arg Gly Leu Asp Leu Gln Asp Ile
 450 455 460
 Lys Ile Val Ile Asn Phe Asp Ile Cys Ser Cys Lys Glu Tyr Ile His
 465 470 475 480
 Arg Val Gly Arg Thr Ala Arg Ala Gly Arg Ser Gly Lys Ser Ile Thr
 485 490 495
 Phe Val Thr Gln Tyr Asp Val Glu Asn Phe Leu Ala Ile Glu Lys Gln
 500 505 510
 Leu Asn Lys Lys Ile Asp Lys Phe Thr Asp Leu Asp Glu Asn Asp Val
 515 520 525
 Leu Leu Tyr His Glu Gln Thr Ile Glu Ala Leu Arg Leu Ser Glu Ile
 530 535 540
 Glu Met Lys Glu Asn Gln Glu Leu Tyr Lys Lys Asn Lys Phe Lys Lys
 545 550 555 560
 Lys Lys

<210> 172

<211> 101

<212> PRT

<213> Plasmodium falciparum

<400> 172

Met Lys Ser Glu Val Thr Ile Glu Glu Asn Arg Asp Asn Pro Glu Asp
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 Gly Pro Leu Gly Leu Leu Ser Glu Cys Val Lys Asp Asn Ala Gln Val
 20 25 30
 Leu Ile Asn Cys Arg Asn Asn Arg Lys Ile Leu Gly Arg Val Lys Ala
 35 40 45
 Phe Asp Arg His Cys Asn Leu Leu Leu Thr Gly Val Arg Glu Ile Trp
 50 55 60
 Val Glu Val Val Lys Asp Lys Lys Lys Lys Lys Lys Ile Asn Lys Asp
 65 70 75 80

Arg Tyr Ile Ser Ile Leu Phe Leu Arg Gly Asp Ser Val Ile Leu Ile
85 90 95
Leu Arg Asn Pro Lys
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<210> 173
<211> 2380
<212> PRT
<213> Plasmodium falciparum
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<400> 173																
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Ser	Phe	Ile	Asn	Ile	Glu	Ser	Ala	Glu	Glu	His	Lys	Asn	Ile	Asn	Lys	
			20					25					30			
Asn	Ile	Lys	Asn	Lys	Lys	Phe	Ile	Asn	Ile	Asp	Asn	Ser	Asn	Asn	Cys	
		35					40					45				
Asn	Asn	Ser	Asn	Ser	Asn	Asn	Ser	Asn	Ser	Asn	Asn	Asn	Asn	Asn	Asn	
	50					55					60					
Asn	Asn	Asn	Ile	Val	Arg	Asn	Asn	Asn	Asn	Phe	Ile	Asn	Ala	Asp	Lys	
65					70					75					80	
Lys	Lys	Asn	Val	Ile	Leu	Asn	Glu	Asp	Asp	Asp	Ile	Lys	Asn	Lys	Glu	
				85					90					95		
Leu	Val	Asp	Glu	Ser	Phe	Val	Asn	Ile	Phe	Phe	Tyr	Glu	Asn	Tyr	Phe	
			100					105					110			
Lys	Asn	Leu	Phe	Asn	Leu	Asn	Asp	Val	Ser	Asn	Asn	Lys	Val	Ile	Asn	
		115					120					125				
Ile	Ile	Glu	Gln	Lys	Glu	Gly	Asp	Glu	Arg	Asn	Ala	Asp	Asn	Asn	Leu	
	130					135					140					
Lys	Asn	Lys	Asn	Ile	Val	Arg	Asp	Asn	Ile	Asn	Lys	Ile	Lys	Asn	Thr	
145					150					155					160	
Arg	Asn	Val	Asn	Glu	Ile	Leu	Ile	Tyr	Asn	Asn	Lys	Tyr	Ile	Ile	Asn	
				165					170					175		
Phe	Leu	Asn	Asp	Thr	Thr	Lys	Cys	Lys	Ile	Glu	Ile	Ala	Asn	Phe	Ile	
			180					185					190			
Ser	Phe	Tyr	Phe	Phe	Phe	Leu	His	Ile	Lys	Asp	Ile	Leu	Asn	Lys	Asn	
		195					200					205				
Asn	Asp	Asn	Gly	Leu	Met	Asn	Lys	Lys	Lys	Ser	Ser	Leu	Lys	Asp	Ile	
	210					215					220					
Cys	Asn	Ile	Lys	Tyr	Ile	Tyr	Lys	Lys	Ile	Lys	Thr	Ser	Lys	Lys	Tyr	
225					230					235					240	
Ile	Ser	Ser	Asn	Asp	Met	Asp	Thr	Cys	Ile	Arg	Asn	Tyr	Leu	Tyr	His	
				245					250					255		
Ile	Asp	Lys	Lys	Asn	Tyr	Pro	Ile	Ile	Lys	Lys	Thr	Lys	Cys	Pro	Phe	
			260					265					270			
Leu	Ser	Asn	Thr	Lys	Val	Leu	Tyr	Asn	Lys	Arg	Gly	Tyr	Met	Ala	Ser	
		275					280					285				
Cys	Pro	Leu	Thr	Val	Lys	Gly	Lys	Ile	Lys	His	Lys	Thr	Asn	Ile	Ser	
	290					295					300					

Ser Lys Ile Lys Leu Lys Arg Glu Arg Asn Asp Ser Asn Met Phe Asn
 305 310 315 320
 Asn Met Ile Arg Lys Asp Asn Asn Met Asn Val Lys Gln Glu Gln Ile
 325 330 335
 His Asn Asn Asp Thr Val Asn Asn Asn Met Thr Thr Asn Val Asp Gly
 340 345 350
 Cys Ser Glu Pro Thr His Asp Asn Thr Phe Leu Asn Ile Glu Glu Glu
 355 360 365
 Glu Phe Lys Met Leu Lys Asn Tyr Leu Lys Asp Val Lys Glu Arg Lys
 370 375 380
 Lys Lys Tyr Lys Lys Gly Tyr Ile Ser Thr Ser Asn Phe Ile Ser His
 385 390 395 400
 Gly Val Arg Leu Gly Thr Thr Arg Ser Arg Ile Arg Gly Lys Cys Leu
 405 410 415
 Leu Lys Asn Lys Lys Met His Met Tyr Asp Asp Asn Glu Glu Leu Asn
 420 425 430
 Lys Lys Lys Lys Lys Lys Met Asn Lys Asp Asp Arg Ile Glu Asn Gly
 435 440 445
 Ile Met Glu Asp Val Asn Asp Lys Arg Lys Leu Asp Cys Asp Asn Lys
 450 455 460
 Ile Lys Phe Asn Asp Ile Glu Lys Glu Asp Leu Asn Ile Cys Asp Thr
 465 470 475 480
 Glu Asn Val Asp Asn Asn Ser Asn Asn Asn Asn Asn Asn Asn Asn
 485 490 495
 Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Gly Tyr
 500 505 510
 Lys Lys Lys Ile Lys Asn Lys Asn Lys Asn Lys Asn Lys Lys Lys Asn
 515 520 525
 Lys Leu Asn Asn Tyr Asn Asp Asn Phe Val Ser Val Asn Gly Ser Tyr
 530 535 540
 Asp Asn Tyr Ser Ile Asp Asn Asn Val Ile Asn Asp Glu Ile Arg Glu
 545 550 555 560
 Lys Lys Lys Asn Asn Lys Glu Val Lys Ile Met Val Asp Lys Asn Asn
 565 570 575
 Asp Thr Glu Lys Asp Gly Asn Lys Lys Tyr Asp Thr Ser Tyr Ser Phe
 580 585 590
 Asn Ile Lys Asn Thr Leu Ser Lys Val Phe Tyr Lys Asn Tyr Val Lys
 595 600 605
 Arg Lys Gly Met Ile Lys Gln Gln His Asn Asn Ile His Asn Thr His
 610 615 620
 Asn Ile His Asn Thr His Asn Met His Asn Thr His Asn Ile His Asn
 625 630 635 640
 Glu Lys Val Val Leu Leu Asp Asp Thr Lys Glu Lys Ala Asp Pro Met
 645 650 655
 Asn Leu Gly Ile Ser Phe Ser Pro Ala Gly Leu Leu Ile Pro Tyr His
 660 665 670

Leu Gly Val Ser Ser Leu Leu Ile Glu Lys Asn Ile Leu Asn Met His
 675 680 685
 Thr Ser Ile Ala Gly Ser Ser Ala Gly Ser Ile Cys Ala Cys Cys Leu
 690 695 700
 Ser Val Gly Leu Ser Val Asn Lys Cys Tyr Phe Leu Ile Glu Asn Ile
 705 710 715 720
 Ile Ser Asn Val Tyr Lys His Gly Cys Tyr Gln Lys Leu Glu Asn Ile
 725 730 735
 Leu Asn Ile Glu Leu Asn Lys Tyr Leu Tyr Glu Asp Ser Tyr Ile Tyr
 740 745 750
 Leu Asn Asn Arg Ile Gly Asn Val Phe Val Gly Ile Thr Gln Ile Leu
 755 760 765
 Pro Tyr Tyr Lys Lys Leu Asn Ile Asn Asn Phe Tyr Asp Asp Asn Asp
 770 775 780
 Leu Ile Ser Ala Ile Ile Ala Ser Cys Asn Ile Pro Met Tyr Leu Ser
 785 790 795 800
 Ser Asn Ile Phe Val Asn Phe Arg Asn Lys Lys Cys Ile Asp Gly Phe
 805 810
 Phe Ser Thr Lys Lys Lys Asp Phe Gly Cys Pro Asn Thr Arg Thr Glu
 820 825 830
 Arg Ile Ile Lys Val Ser Pro Phe Asp Ser Asp Tyr Val Gly Ile Gly
 835 840 845
 Asn Lys Asn Asn Ser Val Ile Ser Pro His Leu Ile Lys Tyr Asn His
 850 855 860
 Ile Leu Phe Leu Phe Ile Cys Val Lys Asn Ile Phe His Lys Tyr Ile
 865 870 875 880
 Asn Asn Leu Trp Ile Glu Lys Asp Tyr Leu Phe Leu Ile Glu Asn Leu
 885 890 895
 Lys Asp Ile Leu Glu Arg Lys Ile Phe Asp Tyr Tyr Thr Phe Val Lys
 900 905 910
 Arg Tyr Phe Thr Phe Leu Arg Lys Asn Glu Thr Ile Asp Asp Lys Tyr
 915 920 925
 Glu Glu Glu Glu Tyr Glu Asp Glu Gly Glu Glu Tyr Glu Glu Glu Asp
 930 935 940
 Asp Asp Glu Glu Glu Asp Glu Glu Glu Tyr Gly His Asn Asn Asp Asn
 945 950 955 960
 Gln Asp Asp Glu Gly Asp Lys Asn Lys Thr Thr Asn Glu Lys Asn Lys
 965 970 975
 Lys Lys Lys Asn Lys Asn Asn Asn Asn Asn Asn Ile Phe Asn Asn
 980 985 990
 Asn Ile Phe Asn Asn Asn Ile Phe Asn Asn Asn Met Asn Ser Cys Val
 995 1000 1005
 Gly Val Ser Glu Lys Asp Phe Ile Ser Thr Ser Ile Val Ala Ser Phe
 1010 1015 1020
 Ala Asn Ile Lys Arg Gln Met Asn Glu Lys Ile Glu Lys Arg Lys Asn
 1025 1030 1035 1040
 Leu Lys Lys Glu Lys Lys Glu Lys Leu Gln Arg Lys Asn Met Asn Lys

1045	1050	1055
Cys Ser Lys Asn Arg Asn Arg Asn Arg Tyr Ile Asn Lys Asp Ser Asn		
1060	1065	1070
Ile His Leu Met Asn Leu Ile Arg Ile Lys Phe Lys Asn Leu Asn Tyr		
1075	1080	1085
Met Asn Met Asn Ser Phe Glu Ile Glu Leu Tyr Leu Lys Ile Asn Asn		
1090	1095	1100
Asp Ile Phe Leu Gln Phe Asn Lys His Asn Tyr Asn Val Gln Asn Phe		
1105	1110	1115
Tyr Asn Phe Ser Ile Thr Leu Ile Asn Ile Met Ser Lys Tyr Tyr Ser		
1125	1130	1135
Glu Asn Phe Tyr Ala Tyr Asn Leu Glu Lys Ile Val Tyr Lys Phe Leu		
1140	1145	1150
Leu Asn Asn Lys Asn Phe Glu Tyr Ile Glu Lys Gln Tyr Ser Ser Lys		
1155	1160	1165
Glu Asp Met Asn Glu Leu Asp Ile Leu Val Asn Thr Tyr Asp Met Lys		
1170	1175	1180
Tyr Asp Lys Ile Ile Glu Phe Leu Lys Asn Asn Gly Tyr Leu Lys Ile		
1185	1190	1195
Asp Arg Tyr Ile Tyr Phe Tyr Pro Lys Leu Lys Thr Asp Ile Ile Leu		
1205	1210	1215
Phe Phe Phe Lys Glu Ile Phe Leu Asn Asp Asn Ile Leu Lys Ile Asp		
1220	1225	1230
Arg Lys Phe Leu Lys Lys Asn Ile Thr Ile Met Ile Glu Val Leu Lys		
1235	1240	1245
Glu Ile Phe Phe Lys Glu Tyr Val Lys Arg Cys Ile Thr Lys Val Ile		
1250	1255	1260
Phe Phe Pro Val His Met Lys Glu His Asp His Val Met Asn Lys Asn		
1265	1270	1275
Tyr Tyr Asn Asn Gln Tyr Val Asn Asn Ser Asn Met Phe Asn Thr Arg		
1285	1290	1295
Gly Asp His Asn Asn Asn Asn Gln Thr Asn Asp Asn His Tyr Asn His		
1300	1305	1310
His Tyr Asp Asp Thr His Asn Asn Asn Asn Asn Asn Ser Lys Tyr		
1315	1320	1325
Tyr Lys Asn Lys Asn Lys Asn Lys Ile Met Tyr Glu Lys Glu Arg Lys		
1330	1335	1340
Ser Ser Ser Leu Phe Ile Ser Asn Asn Val Gln Asp Val Lys Pro Ile		
1345	1350	1355
Lys His Tyr Leu Lys Tyr Ser Ser Ile Tyr Lys Asn Phe Ile Tyr Ile		
1365	1370	1375
Ile Ser Glu Ile Lys Asn Phe Asn Asn Lys Ile Thr Lys Ile Asn Arg		
1380	1385	1390
Tyr Asn Tyr Tyr Asn Tyr Met Asn Leu Asn Ile Asp Asp Leu Asn Asp		
1395	1400	1405
Ala Tyr Leu Phe Leu Tyr Val Tyr Leu Tyr Ser Asn Val Tyr Tyr Lys		
1410	1415	1420

Ser Phe Phe Ser Leu Met Asn Met Gln Tyr Arg Asp Tyr Leu Leu Arg
 1425 1430 1435 1440
 Ala Arg Arg Leu Ser Arg Glu Glu Asn Lys Ile Ser Pro Lys Asp Asp
 1445 1450 1455
 Ser Thr Gly Lys Asn Asn Thr Thr Asn Asn Asn Ile Ser Asn Asn Asn
 1460 1465 1470
 Asn Ile Ser Asn Asn Ile Asn Asn Asn Asn Asn Ile Asn Asn Ile Cys
 1475 1480 1485
 Ser Arg Asp Asn Lys Gly Asn Pro Thr Asn Tyr Asn Asn Ile Ser Gly
 1490 1495 1500
 Lys Glu Lys Asn Arg Asn Ile Phe Arg Lys Trp Asn Ser Lys Asp Leu
 1505 1510 1515 1520
 Lys Thr Asn Ser Asn Asn Tyr Ile Ala Thr Asn Lys Leu Ser Lys Thr
 1525 1530 1535
 Phe Ser Gly Ile Trp Leu Asp Lys Lys Lys Lys Lys Asn Asp Lys Thr
 1540 1545 1550
 Ile Glu Arg Asn Glu Ser Ala Glu Asn Lys Ile Glu Lys Asn Ile Ile
 1555 1560 1565
 Glu Asn Asn Tyr Thr Ile Asp Asn Asp Lys Arg Glu Phe Asn Met Asp
 1570 1575 1580
 Asn Thr Ile Lys Asn Glu Lys Arg Glu Ser Glu Asn Asn Asn Lys His
 1585 1590 1595 1600
 Met Glu Cys Leu Gln Asn Asp Asn Asp Lys Asn Val Asn Asn Asn Phe
 1605 1610 1615
 Lys Phe Ile Glu Asn Asn Gly Thr Asn Glu Ile Lys Lys Glu Leu Tyr
 1620 1625 1630
 Arg Asn Asp Met Tyr Asn Asp Gly Ile Ile Asn Phe Asp Ile Asn Asn
 1635 1640 1645
 Glu Tyr Phe Phe Arg Asn Leu Asn Asn Met Asn Glu Cys Gln Phe Phe
 1650 1655 1660
 Lys Tyr Thr Leu Phe Asp Lys Asn Asp Asn Val Phe Asp His Ile Asn
 1665 1670 1675 1680
 Asn Lys Asp Asn Thr Asp Tyr Asn Lys Tyr Phe Tyr Lys Phe Glu Asn
 1685 1690 1695
 Leu Ile Ile Phe Asn Tyr Asp Phe Thr Leu Ile Ser Lys Ile Glu Asp
 1700 1705 1710
 Phe Tyr Gln Ser Asn Arg Tyr Lys Ile Phe Asp Ile Asn Lys Lys Lys
 1715 1720 1725
 Lys Lys Glu Ile Phe Tyr His Leu Tyr Tyr Ile Tyr Ile Tyr Tyr Arg
 1730 1735 1740
 Asp Ile Leu Phe Leu Leu Lys Phe Val Phe Thr Leu Asn Phe Cys Glu
 1745 1750 1755 1760
 Asn Thr Lys Tyr Lys Phe Leu Lys Arg Arg Glu Asn Thr Tyr Lys Lys
 1765 1770 1775
 Lys Tyr Lys Asp Met Arg Val Pro Tyr Ile Asn Leu His Met Glu Gln
 1780 1785 1790

Gly Gly Asp Lys Lys Gly Asn His Glu Asn Ile Gln His Arg Lys Asn
 1795 1800 1805

Asn Glu Val Asp Ile Val Tyr Asn Asn Arg Val Glu Asp Ile Arg Glu
 1810 1815 1820

Asn Met Asn Glu Pro Ile Lys Asn Gly Tyr Ala Asp Thr Tyr Gly Asn
 1825 1830 1835 1840

Ile Tyr Gly His Thr His Asn Asn Tyr His Asn Tyr His Asn Asn Asn
 1845 1850 1855

Asn Asn Ile Asn Asn Asp Met Thr Leu Cys Ser Arg Ser Val Leu Gln
 1860 1865 1870

Lys Ser Lys Gln Ile Ser Leu Leu Asn Asn Pro Thr Phe Ser Ser Asn
 1875 1880 1885

Ile Asp Glu Thr Phe Met Asp Ser Ala Ser Asp Val Asn Asp Tyr Asp
 1890 1895 1900

Ile Asp Asn Asn Lys Arg Val Gln Pro His Phe Tyr Asp Ile Cys Glu
 1905 1910 1915 1920

His Ile Lys Lys Pro Pro Asn Asn Gly Val Asn Asn Ile Tyr Ser Asn
 1925 1930 1935

Asn Asn Leu Tyr Gly Asp Asp Asn Met Asn Tyr Pro Thr Ser Ser Thr
 1940 1945 1950

Gly Lys Gly Thr Pro Arg Arg Leu Phe Glu Gly Ser Asn Asn Asp Gly
 1955 1960 1965

Asn Asn Ser Val Ile Leu Ser Lys Ser Glu Tyr Val Arg Lys Lys Arg
 1970 1975 1980

Leu Arg Tyr Leu Glu Gly Asn Asp Ser Asp Phe Val Glu Asp Leu Lys
 1985 1990 1995 2000

Thr Asn Ile Glu Asp Glu Leu Tyr Asp Lys Tyr Lys Thr Tyr Phe Val
 2005 2010 2015

Lys Asn Val Tyr Ser Met Arg Lys Leu Phe Lys Ile Ala Leu Glu Gly
 2020 2025 2030

Ser Glu Glu Lys Val Ile Lys Lys Ile Tyr Asp Leu Gly Arg Ser Asp
 2035 2040 2045

Ala His Leu Trp Leu Phe Val Glu Tyr Leu Asn Val Gly Ile Tyr Leu
 2050 2055 2060

Tyr Lys Arg Ile Tyr Thr Ile Tyr Ile Lys Leu Leu Thr Val Phe Glu
 2065 2070 2075 2080

Ser Leu Ile Tyr Leu Thr Asn Ile Asn Lys Lys Lys Lys Lys Val Asp
 2085 2090 2095

Ile Ser Thr Phe Leu Ala Ser Ile Glu Tyr Ala Val Ile Tyr Val Asn
 2100 2105 2110

Gly Asn Pro Phe Asp Leu Phe Lys Phe Cys Asn Leu Leu Val Leu Cys
 2115 2120 2125

Tyr Thr Tyr Tyr Ser Met Pro Tyr Val Lys Ala Gln Thr Ser Val Leu
 2130 2135 2140

Asn Asn Asn Asp Asp His Lys Leu Gly Thr Val Tyr Asp Lys Asn Ile
 2145 2150 2155 2160

Met Asn Lys Glu Ser Val His Ala Asn Gly Ile Ser Lys Glu Leu Ile

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<210> 174
<211> 482
<212> PRT
<213> Plasmodium falciparum
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373

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	130					135					140				
Tyr	Asn	Glu	Pro	Thr	Tyr	Lys	Pro	Asn	Asn	Asp	Glu	Glu	Asn	Glu	Ile
145					150					155					160
Ile	Glu	Asn	Thr	Lys	Arg	Asn	Ile	Glu	Asn	Ile	Leu	Asn	Glu	Lys	Leu
				165					170					175	
Asn	Lys	Ser	Asn	Ile	Val	Asn	Lys	Lys	Glu	Glu	Lys	Tyr	Tyr	Arg	Tyr
			180					185					190		
Ile	Pro	Gln	Asn	Lys	Leu	Asn	Asn	Asn	Leu	Glu	Glu	Arg	Ile	Ile	Lys
		195				200						205			
Ile	Val	Glu	Lys	Gly	Thr	Asp	Pro	Leu	Asp	Val	Ser	Lys	Phe	Lys	His
	210					215					220				
Lys	Lys	Leu	Pro	Asn	Ile	Lys	Asn	Ser	Pro	Asp	Tyr	Pro	Ile	Leu	Arg
225				230						235					240
Ser	Pro	Thr	Arg	Lys	Leu	Asn	Lys	Glu	Glu	Glu	Asn	Asp	Trp	Lys	Ile
				245					250					255	
Pro	Pro	Cys	Val	Ser	Asn	Trp	Lys	Asn	Asn	Lys	Gly	Tyr	Asn	Ile	Pro
		260					265						270		
Leu	Asp	Lys	Arg	Ile	Gln	Ser	Asp	Asn	Lys	Lys	Leu	Asn	Asn	Val	Val
		275					280					285			
Val	Asn	Glu	Asn	Phe	Ala	His	Leu	Ser	Glu	Tyr	Leu	Tyr	Val	Ala	Glu
	290					295					300				
Lys	Lys	Ala	Arg	Glu	Glu	Ile	Gln	Ile	Arg	Asn	Ser	Val	Met	Lys	Gln
305					310					315					320
Lys	Lys	Leu	Lys	Glu	Lys	Glu	Glu	Lys	Glu	Asn	Val	Leu	Lys	Asn	Leu
				325					330					335	
Ala	Ile	Gln	Ala	Arg	Lys	Glu	Lys	Gly	Leu	Ala	His	Ser	Ser	Leu	Ile
			340					345					350		
Asn	Asp	Arg	Lys	Arg	Glu	Ile	Glu	Arg	Glu	Tyr	Lys	Ile	Glu	Lys	Asn
		355					360					365			
Leu	Lys	Lys	Met	Lys	Asn	Tyr	Glu	Asn	Arg	Tyr	Val	Glu	Glu	Gln	Ile
	370					375					380				
Ala	Leu	Asn	Lys	Val	Asn	Val	Ser	Lys	Asn	Asn	Asn	Ile	His	Asp	Ile
385					390					395					400
Thr	Leu	Phe	Asn	Ile	Asn	Glu	Gln	Asn	Asn	Val	Thr	Thr	Thr	Gln	Asp
			405						410					415	
Asp	Asp	Thr	Tyr	Gln	Ile	Tyr	Asp	Thr	Ala	Leu	Phe	Asn	Asn	Lys	Asn
			420					425					430		
Asn	Ala	Asn	Ile	Tyr	Lys	Phe	Ser	Ser	Glu	Arg	Leu	Arg	Lys	Asn	Val
		435					440					445			
Gln	Lys	Ile	Glu	Thr	Arg	Asp	Thr	Met	Gln	Pro	Val	Lys	Tyr	Ile	Lys
	450					455					460				
Asp	Ile	Ser	Asp	Pro	Phe	Gly	Leu	Asp	Ser	Leu	Leu	Ser	Gln	Ala	Lys
465					470					475					480
Lys	Lys														

<210> 175
 <211> 426
 <212> PRT
 <213> Plasmodium falciparum

<400> 175

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Met Tyr Asp Lys Lys Tyr Asp Ile Leu Leu Leu Gly Cys Thr Gly Tyr
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Thr Gly Gln Met Val Leu Glu Tyr Phe Leu Glu Asn Tyr Glu Lys Lys
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Ile Lys Ser Glu Glu Ile Lys Leu Leu Cys Gly Val Arg Asn Ile Lys
          35          40          45

Lys Leu Asp Thr Phe Leu Tyr Thr Ile Lys Glu Lys Asn Asp Val Ile
          50          55          60

Leu Lys Lys Ile Asn Lys Lys Glu Ile Asp Ile Asn Ile Tyr Glu Ser
          65          70          75          80

Ile Leu Asn Cys Cys Lys Ile Ser Lys Val Val Ile Ser Thr Ile Gly
          85          90          95

Pro Tyr Ile Leu Tyr Gly Tyr Asn Ile Val Lys Ala Cys Val Glu Gly
          100          105          110

Gly Cys His Tyr Val Asp Val Cys Gly Glu His Asn Phe Ile Leu Asn
          115          120          125

Ile Tyr Lys Glu Phe Asn Asn Ile Ala Ile Glu Lys Lys Leu Lys Ile
          130          135          140

Ile His Ser Ala Ser Phe Ile Ser Ala Ile Ser Asp Ile Gly Asn Phe
          145          150          155          160

Ile Met Gln Glu Glu Phe Phe Arg Gln Tyr Lys Lys Thr Cys Pro Val
          165          170          175

Ile Lys Ile Arg Leu Cys Asn Glu Gly Asn Asn Leu Arg Thr Ile Gly
          180          185          190

Lys Thr Thr Ile Lys Ser Ala Leu Leu Phe Lys Lys Tyr Ile Lys Asn
          195          200          205

Asn Tyr His Lys Tyr Tyr Leu Cys Asp Asn Lys Tyr Asp Val Gln Tyr
          210          215          220

Lys Val Ser Gly Asn Asn Tyr Leu Lys Lys Pro Lys Glu Ile His Thr
          225          230          235          240

Asn Ser Phe Leu Asp Tyr Glu Lys Glu Phe Gly Tyr Cys Phe Asp Thr
          245          250          255

Ser Tyr Ser Asn Ile Glu Glu Ala Tyr Val Leu Trp Ser Asn Tyr Leu
          260          265          270

Leu Asn Tyr Lys Tyr Gly Lys Asp Leu Val Ile Asn Tyr Lys Gln Tyr
          275          280          285

Asp Thr His Leu Ser Thr Ser Met Tyr Ile Phe Lys Lys Val Cys Gly
          290          295          300

Lys Ile Phe Asn Phe Phe Gln Ser Phe Phe Phe Met Asp Tyr Leu Ile
          305          310          315          320

Asn Lys Tyr Ile Asp Leu Phe Tyr Lys Pro Lys Thr Met Asn Glu Leu
          325          330          335

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Lys Lys Ala Tyr Trp Lys Cys Ile Ile Val Gly Glu Asp Asn Asp Asn
 340 345 350
 Asp Glu Glu Lys Lys Lys Lys Ser Ile Tyr Leu Tyr Leu Ser Gly Lys
 355 360 365
 Asn Glu Asp Pro Gly Tyr Leu Leu Ser Ala Lys Ile Ile Ser Glu Ser
 370 375 380
 Ala Ile Ser Leu Leu Lys Glu Asn Asp Leu Pro Lys Thr Phe Gly Val
 385 390 395 400
 Ile Ser Val Ser Val Gly Leu Gly Asn Val Leu Val Glu Arg Leu Lys
 405 410 415
 Lys Ala Ser Ile His Met Ser Ile Glu Lys
 420 425

<210> 176
 <211> 58
 <212> PRT
 <213> Plasmodium falciparum

<400> 176
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 Gln Thr Pro Lys Val Pro Lys Leu Asp Lys Lys Lys Arg Leu Thr Gly
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 Arg Ala Lys Lys Arg Gln Leu Tyr Asn Arg Arg Phe Ser Asp Asn Gly
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 Gly Arg Lys Lys Gly Pro Asn Ser Lys Ala
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<210> 177
 <211> 338
 <212> PRT
 <213> Plasmodium falciparum

<400> 177
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 Tyr Phe Ile Ile Ile Ser Phe Cys Ile His Asn Asn Ile Ser Cys Phe
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 Asn Val Asn Leu Thr Lys Thr Asn Glu Asp Ala Asn Ile Ile Arg Leu
 35 40 45
 Asn Lys Leu Ile Ser Met Lys Arg Asn Ile Ser Arg Arg Lys Ser Asp
 50 55 60
 Glu Phe Ile Lys Asp Gly Lys Val Lys Ile Asn Asn Lys Ile Ile Thr
 65 70 75 80
 Asn Pro Gly Thr His Val His Ile Gly Lys Asp Ser Leu Arg Ile Tyr
 85 90 95
 Asp Lys Lys Ile Lys Leu Thr Asn Ile Ile Asn Met Ile Lys Gln Asn
 100 105 110
 Glu Asn Lys Leu His Lys Trp Ile Val Leu His Lys Pro Lys Gly Leu
 115 120 125
 Leu Cys Thr Ser Asn Asp Glu Lys Asn Arg Lys Ser Ile Tyr Thr Leu

130					135					140					
Phe 145	Pro	Glu	Glu	Met	Leu 150	Gln	Lys	Tyr	Arg	Leu 155	Val	Thr	Val	Gly	Arg 160
Leu	Asp	Arg	Asn	Thr 165	Ser	Gly	Val	Leu	Leu 170	Leu	Thr	Asn	Asp	Tyr	Ala 175
Trp	Val	Asn	Lys	Leu 180	Thr	His	Pro	Lys	Tyr 185	Gln	Arg	Ile	Arg	Thr	Tyr 190
Arg	Val	His	Ile	Glu	Gly	Pro	Val 200	Lys	Met	Asn	Ala	Leu	Lys	Glu	Leu 205
Ala	Arg	Gly	Ile	Tyr	Leu	Glu	Glu 215	Asp	Glu	Lys	Thr	Gln	Pro	Lys	Lys 220
Ile 225	Tyr	Asn	Tyr	Lys	Glu 230	Ser	Arg	Glu	Lys	Ser 235	Asn	Ile	Asp	Asp	Lys 240
Lys	Lys	Lys	Lys	Met 245	Ser	Lys	Met	Lys	Lys	Lys	Thr	Asn	Pro	Ala	Phe 255
Ile	Glu	Ile	Leu	Arg	Glu	Glu	Lys 265	Ile	Lys	Ile	Lys	Glu	Asp	Thr	Lys 270
Lys	Ile	Thr	Val	Leu	Asn	Ile	Ser 280	Ile	Lys	Glu	Gly	Arg	Asn	Arg	Gln 285
Ile 290	Arg	Lys	Met	Phe	Gln	Gln	Ile 295	Asn	Gln	Pro	Val 300	Ile	Lys	Ile	Lys
Arg 305	Thr	Ser	Phe	Glu	Asn	Ile	Thr 310	Leu	Lys	Asn	Ile 315	Tyr	Phe	Pro	Lys 320
Gln	Tyr	Arg	Glu	Leu	Asn	Gln	Lys	Glu	Val 330	Asn	Asp	Leu	Lys	Leu	Arg 335

Asn Phe

<210> 178
 <211> 904
 <212> PRT
 <213> Plasmodium falciparum

<400> 178

Met 1	Ser	Ser	Lys	Asp 5	Lys	Asn	Leu	Phe	Ser 10	Asp	Asp	Glu	Ser	Asp 15	Asp
Gly	Arg	Lys	Lys	Lys	Arg	Leu	Lys	Lys	Val	Ser	Ser	Ser	Leu	Phe	His 30
Asp	Asp	Asp	Asp	Asp	Asn	Phe	Ile 40	Ser	Asn	Lys	Lys	Val	Glu	Lys	Ser 45
Lys	Ser	Lys	Lys	Lys	Ser	Asp	Ala 55	Ile	Tyr	Ile	Asp	Asp	Asn	Glu	Ser 60
Asn 65	Asn	Asn	Asn	Asn	Tyr 70	Asn	Asn	Thr	Asn	Lys 75	Ser	Ser	Asn	Arg	Lys 80
Ser	Leu	Glu	Asn	Lys 85	Ser	Ser	Lys	Thr	Ser 90	Pro	Lys	Phe	Tyr	Asp	Ile 95
Thr	Ser	Phe	Phe	Lys	Pro	Ser	Ser	Lys	Lys	Leu	Glu	Asp	Asn	Asn	Thr 110
Met	Lys	Lys	Ser	Asn	Ser	Lys	Glu	Asp	Glu	Lys	Leu	Val	Val	Asn	Asn

115							120					125				
Leu	Asn	Asp	Tyr	Phe	Asn	Ile	Leu	Gln	Asn	Asp	Asn	Lys	Val	Thr	Lys	
130						135					140					
Glu	Asp	Thr	Lys	Ser	Asn	Asn	Val	Ser	Pro	Lys	Asn	Glu	Ile	Asn	Lys	
145					150					155					160	
Ser	Asn	Val	Lys	Arg	Glu	Arg	Glu	Ser	Glu	Gln	Tyr	Glu	Ile	Ser	Ser	
				165					170					175		
Glu	Asn	Asp	Thr	Val	Ser	Ser	Lys	Lys	Asn	Val	Leu	Ile	Ser	Pro	Ala	
			180					185					190			
Lys	Lys	Gln	Lys	Thr	Gln	Asn	Asn	Asn	Asn	Glu	Asp	Leu	Gln	Lys	Phe	
		195					200					205				
Asp	Tyr	Leu	Pro	Phe	His	Asn	Gln	Lys	Phe	Val	Ile	Thr	Gly	Val	Phe	
	210					215					220					
Lys	Asn	Phe	Thr	Arg	Asp	Glu	Leu	Gln	Ser	Lys	Ile	Lys	Glu	His	Gly	
225					230					235					240	
Gly	Ser	Val	Met	Thr	Ala	Val	Ser	Thr	Lys	Thr	Asn	Tyr	Leu	Val	His	
				245					250					255		
Gly	Glu	Tyr	Leu	Glu	Asp	Gly	Arg	Leu	Phe	Asn	Glu	Gly	Arg	Lys	Tyr	
			260					265					270			
Thr	Lys	Ala	Phe	Glu	Leu	Gln	Gln	Gln	Asn	Lys	Ser	Asn	Ile	Lys	Ile	
		275						280					285			
Leu	Asn	Glu	Glu	Glu	Leu	Leu	Lys	Leu	Leu	Pro	Gln	Thr	Asp	Gln	Thr	
	290					295					300					
Gln	Glu	Asn	Asp	Lys	Thr	Tyr	Ala	Ser	Asp	Thr	Ile	Lys	Thr	Glu	Asn	
305					310					315					320	
Lys	Asp	Lys	Asn	Tyr	Asn	Tyr	Glu	Lys	Lys	Asp	Lys	Asn	Tyr	Asn	Tyr	
				325					330					335		
Glu	Lys	Lys	Asp	Thr	His	Asn	Thr	Gln	Asn	Glu	Ile	Leu	Asn	Gln	Leu	
			340					345					350			
Trp	Val	Glu	Lys	Tyr	Arg	Pro	Lys	Asn	Leu	Asn	Glu	Leu	Val	Gly	Asn	
		355						360					365			
Asn	Gln	Asn	Val	Ile	Lys	Leu	Gln	Asn	Trp	Leu	Ala	Ser	Trp	Glu	Asp	
	370					375					380					
Val	Cys	Ile	Lys	Gly	Ile	Lys	Lys	Pro	Ala	Gln	Lys	Thr	Phe	Arg	Gly	
385					390					395					400	
Ile	Phe	Glu	Asn	Val	Asn	Ala	Arg	Cys	Ala	Leu	Leu	Ser	Gly	Pro	Ala	
				405					410					415		
Gly	Ile	Gly	Lys	Thr	Thr	Thr	Ala	Lys	Ile	Val	Ser	Glu	Ala	Ser	Gly	
			420					425					430			
Tyr	Asn	Val	Ile	Glu	Phe	Asn	Ala	Ser	Asp	Glu	Arg	Asn	Lys	Ala	Ala	
		435						440					445			
Val	Glu	Lys	Ile	Ser	Glu	Met	Ala	Thr	Gly	Gly	Tyr	Ser	Ile	Met	Ser	
	450					455					460					
Leu	Asn	Asn	Arg	Lys	Leu	Thr	Lys	Thr	Cys	Ile	Ile	Met	Asp	Glu	Val	
465					470					475					480	
Asp	Gly	Met	Ser	Ser	Gly	Asp	Lys	Gly	Gly	Ser	Thr	Ala	Ile	Leu	Lys	
				485					490					495		

Leu Ile Glu Lys Thr Lys Cys Pro Ile Ile Cys Ile Cys Asn Asp Arg
 500 505 510
 Gln Asn Asn Lys Met Arg Thr Leu Ala Asn Lys Cys Tyr Asp Leu Lys
 515 520 525
 Phe Ser Met Pro Gln Lys Asn Ser Val Val Lys Arg Leu Leu Glu Ile
 530 535 540
 Cys Lys Lys Glu Gly Ile Met Met Glu Pro Asn Ala Leu Glu Leu Leu
 545 550 555 560
 Trp Glu Ser Thr Cys Gly Asp Ile Arg Gln Met Leu Asn Thr Leu Gln
 565 570 575
 Leu Leu Ser Lys Thr Tyr Thr Arg Ile Gln Phe Leu Asp Leu Lys Lys
 580 585 590
 Glu Leu Asn Asn Ser Asn Lys Asn Ile Gln Ser Leu Ala Asn Pro Phe
 595 600 605
 Glu Ile Thr Leu Lys Leu Leu Asn Phe Asn Glu Ser Ser Lys Leu Asn
 610 615 620
 Ile Arg Glu Ile Met Asp Leu Phe Phe Val Asp Tyr Glu Leu Ile Pro
 625 630 635 640
 Tyr Phe Ile Ser Glu Asn Tyr Thr Asn Val Phe Asn Glu Thr Asp Lys
 645 650 655
 Ser Ser Ala Ser Leu Asn Lys Trp Asn Val Phe Ser Gln Ile Ala His
 660 665 670
 Asp Leu Ser Leu Ala Asp Lys Ile Lys Tyr Asn Met Lys Ser Asn Met
 675 680 685
 Asp Phe Ala Leu Leu Pro His Phe Ala Ile Leu Ser Cys Val Cys Pro
 690 695 700
 Val Met Arg Ile Lys Ile Leu Lys Ser Phe Met Ser Gly Arg Val Asn
 705 710 715 720
 Phe Pro Thr Ala Phe Gly Lys Ile Ser Thr Phe Asn Lys Asn Lys Arg
 725 730 735
 Leu Leu Asn Glu Leu Cys Phe Asn Leu Ser Tyr Lys Leu Asn Val Cys
 740 745 750
 Pro Lys Tyr Met Val Thr Ser Gly Phe Leu Asn Tyr Ile Tyr Phe Lys
 755 760 765
 Ile Met Thr Pro Leu His Lys Ala Asp Val Asn Gln Ala Ile Gln Ile
 770 775 780
 Met Glu Glu Tyr Ser Ile Thr Arg Glu Met Val Thr Glu Asn Leu Pro
 785 790 795 800
 Cys Leu Arg Leu Pro Asn Gln Glu Asn Leu Tyr Asp Lys Leu Asp Thr
 805 810 815
 Lys Leu Lys Ser Ser Phe Thr Arg Leu Tyr Asn Ser Ser His Val Ile
 820 825 830
 Lys Ile Asp Pro Asn Ser Met Lys Lys Gly Leu Lys Ser Ser Glu Lys
 835 840 845
 Lys Thr Thr Phe Lys Leu Asn Glu Phe Glu Ser Asp Glu Asp Ile Asp
 850 855 860

Glu Leu Ser Glu Ser Lys Glu Asp Lys Asp Asp Asp Val Leu Ile Lys
 865 870 875 880
 Thr Lys Ile Asp Arg Lys Gly Thr Leu Lys Thr Lys Pro Ser Thr Lys
 885 890 895
 Val Lys Ser Met Lys Lys Ala Lys
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<210> 179
 <211> 224
 <212> PRT
 <213> Plasmodium falciparum

<400> 179
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 1 5 10 15
 Pro Leu Ser Ser Asp Leu Asn Asp Tyr Ser Thr Glu Asp Glu Glu Val
 20 25 30
 Met Asn Ile Leu Ser Asn Asn Met Thr His Asn Asn Asn Leu Thr Ser
 35 40 45
 Asn Asn Ser Asn Val Asn Gln Val Glu Asn Arg Thr Asn Gly Glu His
 50 55 60
 Arg Asn Val Leu Ile Asn Asn Met Asp Asp Thr Asp Glu Met Asn Lys
 65 70 75 80
 Ile Asn Glu Glu Gln Tyr Asp Arg Leu Ser Asp Glu Glu Ile Asn Asp
 85 90 95
 Lys Leu Asp Asn Leu Asp Glu Ser Val Ser Lys Lys Asp Met Tyr Ile
 100 105 110
 Ile Trp Phe Asn Phe Ser Asn Asn Cys Arg Lys Lys Tyr Tyr Asn Met
 115 120 125
 Ile Asp Asn Val Trp Thr Arg Phe Glu Ser Leu Cys Ser Tyr His Asn
 130 135 140
 Ile Pro Lys Lys Ile Leu Phe Lys Leu Trp Asn Lys Ala Tyr Asn Asp
 145 150 155 160
 Leu Ile Cys Thr Leu His Asn Lys Asp Tyr Ile Ser Met Lys Gln Phe
 165 170 175
 Tyr Glu Leu Phe Asp Lys Asn Glu Cys Ser Arg Asn Asn Tyr Ile Gln
 180 185 190
 Phe Ile Asp Ile Leu Gly Glu Ser Trp Tyr Asn Leu Thr Lys Lys Met
 195 200 205
 Glu Asn Lys Trp Asn Thr Ile Leu Gln Gly Asn Ile Ile Lys Gly Thr
 210 215 220

<210> 180
 <211> 285
 <212> PRT
 <213> Plasmodium falciparum

<400> 180
 Met Asn Asn Tyr Ile Asn Met Asn Asn Ser Gln Ala Leu Met Lys Arg
 1 5 10 15

Thr His Lys Arg Asn Leu Ala Gln Lys Phe Lys Lys Leu Ile Gln Lys
 20 25 30
 Lys Ile Leu Gly Lys Phe Phe Ser Ser Arg Lys Asn Glu Lys Gly Val
 35 40 45
 Pro Arg Glu Asn Val Asp Ser Thr Thr Thr Ser Tyr Asn Ser Gly Tyr
 50 55 60
 Leu Ser Tyr Lys Glu Lys Lys Ile Gly Ser Gln Ser Arg Asn Lys Arg
 65 70 75 80
 Ile Asn Ser Lys Asn Asn Asn Asp Ser Asn Lys Asn Lys Lys Asn Asp
 85 90 95
 Tyr Gln Ile Val Gly Ile Lys Gln Asn Lys Gly Lys Lys Tyr Asn Lys
 100 105 110
 Lys Gly Asn Asn Ile Asn Gly Lys Lys Lys Lys Tyr Thr Ile Lys Leu
 115 120 125
 Phe Leu Lys Asn Ile Asp Asp Glu Lys Met Glu Tyr Ile Lys Asn Leu
 130 135 140
 Thr Asp Glu Lys Ile Asp Ile Met Ile Gln Arg Ile His Lys Asp Ile
 145 150 155 160
 Thr Lys Asp Lys Leu Phe Ser Ile Trp Ile Asn Val Arg Tyr Asn Tyr
 165 170 175
 Val Arg Lys Tyr Val Asp Met Met Asn Glu Leu Trp Ser Tyr Val Lys
 180 185 190
 Glu Glu Ser Asp Lys Asn Asn Phe Ser Asp Ile Ala Phe Asn Lys Ile
 195 200 205
 Trp Trp Lys Leu Tyr Pro Glu Leu Ile Ser Glu Phe Arg Glu Lys Asp
 210 215 220
 Asn Asn Asn Tyr Asn Asp Phe Phe Ser Ile Phe Asn Lys Glu Thr Cys
 225 230 235 240
 Asp Pro Asp Ile Tyr Ile Asn Phe Ile Asn Thr Thr Arg Lys Asn Trp
 245 250 255
 Asn Glu Ile Ile Cys Val Met Arg Tyr Lys Trp Ile Thr Ile Ile Pro
 260 265 270
 Phe Asn Phe Pro Pro Arg Lys Tyr Lys Tyr Ile His Val
 275 280 285

<210> 181

<211> 230

<212> PRT

<213> Plasmodium falciparum

<400> 181

Met Asn Lys Lys Asn Tyr Cys Ile Asn Pro Asn Asn Leu Asn Arg Ile
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Lys Ser Asn Glu Tyr Asn Lys Asn Val Pro Ser Asn Ile Leu Asp Val
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Asn Met Lys Asn Met Lys Lys Ser Thr Asn Ala Ile Asp Lys Leu Phe
 35 40 45

Leu Phe Ile Lys Lys Ala Phe Met Phe Gly Leu Ile Ile Cys Val Phe
 50 55 60

Gln Tyr Ser Phe Phe Asn Ser Thr Phe Ser Thr Asn Asp Asn Lys Asn
 65 70 75 80
 Leu Glu Arg Ile Asn Glu Tyr Ile Ile Ser Arg Asn Leu Ile Glu Asp
 85 90 95
 Ser Glu Leu Leu Asn Lys Ser Cys Val Gln Val Lys Glu Asn Ile Val
 100 105 110
 Asp Lys Ile Glu Asn Ile Tyr Glu Ser Lys Arg Asn Asp Phe Ile Ser
 115 120 125
 Lys Val Thr Glu Phe Phe Lys Lys Ile Ser Asn Tyr Ile Glu Lys Glu
 130 135 140
 Ile Arg Gln Val Leu Thr Tyr Phe Lys Glu Gly Lys Lys Asp Thr Val
 145 150 155 160
 Lys Ser Gly Val Thr Phe Phe Asn Arg Ile Ile Gly Phe Phe Lys Gly
 165 170 175
 Leu Lys Ile Phe Ser Met Pro Ile Leu Thr Thr Val Ser Ala Ile Leu
 180 185 190
 Leu Phe Lys Phe Lys Tyr Gln Leu Ala Ser Ile Leu Phe Gly Phe Leu
 195 200 205
 Pro Leu Leu Ser Cys Met Phe Ile Met Tyr Lys Ile Ile Lys Val Asn
 210 215 220
 Ser Glu Met Ser Lys Lys
 225 230

<210> 182

<211> 1558

<212> PRT

<213> Plasmodium falciparum

<400> 182

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 Asn Asn Glu Gln Ile Thr Thr Ile Phe Asn Arg Thr Asn Met Asn Pro
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 Ile Lys Lys Cys His Met Arg Glu Lys Ile Asn Lys Tyr Phe Phe Leu
 35 40 45
 Ile Lys Ile Leu Thr Cys Thr Ile Leu Ile Trp Ala Val Gln Tyr Ala
 50 55 60
 Asn Asn Ser Asp Ile Asn Lys Ser Trp Lys Lys Asn Thr Tyr Val Asp
 65 70 75 80
 Lys Lys Leu Asn Lys Leu Phe Asn Arg Ser Leu Gly Glu Ser Gln Val
 85 90 95
 Asn Gly Glu Leu Ala Ser Glu Glu Val Lys Glu Lys Ile Leu Asp Leu
 100 105 110
 Leu Glu Glu Gly Asn Thr Leu Thr Glu Ser Val Asp Asp Asn Lys Asn
 115 120 125
 Leu Glu Glu Ala Glu Asp Ile Lys Glu Asn Ile Leu Leu Ser Asn Ile
 130 135 140
 Glu Glu Pro Lys Glu Asn Ile Ile Asp Asn Leu Leu Asn Asn Ile Gly
 145 150 155 160

Gln Asn Ser Glu Lys Gln Glu Ser Val Ser Glu Asn Val Gln Val Ser
 165 170 175
 Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly Glu
 180 185 190
 Val Lys Glu Asn Ile Leu Glu Glu Ser Gln Val Asn Asp Asp Ile Phe
 195 200 205
 Asn Ser Leu Val Lys Ser Val Gln Gln Glu Gln Gln His Asn Val Glu
 210 215 220
 Glu Lys Val Glu Glu Ser Val Glu Glu Asn Asp Glu Glu Ser Val Glu
 225 230 235 240
 Glu Asn Val Glu Glu Asn Val Glu Glu Asn Asp Asp Glu Ser Val Ala
 245 250 255
 Ser Ser Val Glu Glu Ser Ile Ala Ser Ser Val Asp Glu Ser Ile Asp
 260 265 270
 Ser Ser Ile Glu Glu Asn Val Ala Pro Thr Val Glu Glu Ile Val Ala
 275 280 285
 Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Ser Val Ala
 290 295 300
 Pro Ser Val Glu Glu Ser Val Glu Glu Asn Val Glu Glu Ser Val Ala
 305 310 315 320
 Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala
 325 330 335
 Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala
 340 345 350
 Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ile Val Ala
 355 360 365
 Pro Thr Val Glu Glu Ser Val Ala Pro Thr Val Glu Glu Ile Val Ala
 370 375 380
 Pro Ser Val Glu Glu Ser Val Ala Pro Ser Val Glu Glu Ile Val Val
 385 390 395 400
 Pro Thr Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ile Val Ala
 405 410 415
 Pro Ser Val Glu Glu Ile Val Ala Pro Ser Val Glu Glu Ile Val Ala
 420 425 430
 Pro Thr Val Glu Glu Ser Val Ala Pro Thr Val Glu Glu Ile Val Ala
 435 440 445
 Pro Ser Val Glu Glu Ser Val Ala Pro Ser Val Glu Glu Ile Val Val
 450 455 460
 Pro Thr Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala
 465 470 475 480
 Glu Asn Val Glu Glu Ile Val Ala Pro Ser Val Glu Glu Ile Val Ala
 485 490 495
 Pro Ser Val Glu Glu Ile Val Ala Pro Ser Val Glu Glu Ile Val Ala
 500 505 510
 Pro Ser Val Glu Glu Ile Val Ala Pro Ser Val Glu Glu Ile Val Ala
 515 520 525

Pro	Ser	Val	Glu	Glu	Ile	Val	Ala	Pro	Ser	Val	Glu	Glu	Ile	Val	Ala
	530					535					540				
Pro	Ser	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala
	545				550					555					560
Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Ser	Val	Glu	Glu	Ile	Val	Ala
				565					570					575	
Pro	Thr	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Ala	Thr	Asn	Leu	Ser
			580					585					590		
Asp	Asn	Leu	Leu	Ser	Asn	Leu	Leu	Gly	Gly	Ile	Glu	Thr	Glu	Glu	Ile
		595					600					605			
Lys	Asp	Ser	Ile	Leu	Asn	Glu	Ile	Glu	Glu	Val	Lys	Glu	Asn	Val	Val
	610					615					620				
Thr	Thr	Ile	Leu	Glu	Asn	Val	Glu	Glu	Thr	Thr	Ala	Glu	Ser	Val	Thr
	625				630					635					640
Thr	Phe	Ser	Asn	Ile	Leu	Glu	Glu	Ile	Gln	Glu	Asn	Thr	Ile	Thr	Asn
				645					650					655	
Asp	Thr	Ile	Glu	Glu	Lys	Leu	Glu	Glu	Leu	His	Glu	Asn	Val	Leu	Ser
			660					665					670		
Ala	Ala	Leu	Glu	Asn	Thr	Gln	Ser	Glu	Glu	Glu	Lys	Lys	Glu	Val	Ile
		675					680					685			
Asp	Val	Ile	Glu	Glu	Val	Lys	Glu	Glu	Val	Ala	Thr	Thr	Leu	Ile	Glu
	690					695					700				
Thr	Val	Glu	Gln	Ala	Glu	Glu	Glu	Ser	Ala	Ser	Thr	Ile	Thr	Glu	Ile
	705				710					715					720
Phe	Glu	Asn	Leu	Glu	Glu	Asn	Ala	Val	Glu	Ser	Asn	Glu	Asn	Val	Ala
			725					730						735	
Glu	Asn	Leu	Glu	Lys	Leu	Asn	Glu	Thr	Val	Phe	Asn	Thr	Val	Leu	Asp
		740						745					750		
Lys	Val	Glu	Glu	Thr	Val	Glu	Ile	Ser	Gly	Glu	Ser	Leu	Glu	Asn	Asn
		755					760					765			
Glu	Met	Asp	Lys	Ala	Phe	Phe	Ser	Glu	Ile	Phe	Asp	Asn	Val	Lys	Gly
	770					775					780				
Ile	Gln	Glu	Asn	Leu	Leu	Thr	Gly	Met	Phe	Arg	Ser	Ile	Glu	Thr	Ser
	785				790					795					800
Ile	Val	Ile	Gln	Ser	Glu	Glu	Lys	Val	Asp	Leu	Asn	Glu	Asn	Val	Val
				805					810					815	
Ser	Ser	Ile	Leu	Asp	Asn	Ile	Glu	Asn	Met	Lys	Glu	Gly	Leu	Leu	Asn
			820					825					830		
Lys	Leu	Glu	Asn	Ile	Ser	Ser	Thr	Glu	Gly	Val	Gln	Glu	Thr	Val	Thr
		835					840					845			
Glu	His	Val	Glu	Gln	Asn	Val	Tyr	Val	Asp	Val	Asp	Val	Pro	Ala	Met
	850					855					860				
Lys	Asp	Gln	Phe	Leu	Gly	Ile	Leu	Asn	Glu	Ala	Gly	Gly	Leu	Lys	Glu
	865				870					875					880
Met	Phe	Phe	Asn	Leu	Glu	Asp	Val	Phe	Lys	Ser	Glu	Ser	Asp	Val	Ile
				885					890					895	
Thr	Val	Glu	Glu	Ile	Lys	Asp	Glu	Pro	Val	Gln	Lys	Glu	Val	Glu	Lys

900						905						910					
Glu	Thr	Val	Ser	Ile	Ile	Glu	Glu	Met	Glu	Glu	Asn	Ile	Val	Asp	Val		
		915					920					925					
Leu	Glu	Glu	Glu	Lys	Glu	Asp	Leu	Thr	Asp	Lys	Met	Ile	Asp	Ala	Val		
	930					935					940						
Glu	Glu	Ser	Ile	Glu	Ile	Ser	Ser	Asp	Ser	Lys	Glu	Glu	Thr	Glu	Ser		
945					950					955					960		
Ile	Lys	Asp	Lys	Glu	Lys	Asp	Val	Ser	Leu	Val	Val	Glu	Glu	Val	Gln		
				965					970					975			
Asp	Asn	Asp	Met	Asp	Glu	Ser	Val	Glu	Lys	Val	Leu	Glu	Leu	Lys	Asn		
			980					985					990				
Met	Glu	Glu	Glu	Leu	Met	Lys	Asp	Ala	Val	Glu	Ile	Asn	Asp	Ile	Thr		
		995					1000					1005					
Ser	Lys	Leu	Ile	Glu	Glu	Thr	Gln	Glu	Leu	Asn	Glu	Val	Glu	Ala	Asp		
	1010						1015				1020						
Leu	Ile	Lys	Asp	Met	Glu	Lys	Leu	Lys	Glu	Leu	Glu	Lys	Ala	Leu	Ser		
	1025				1030					1035					1040		
Glu	Asp	Ser	Lys	Glu	Ile	Ile	Asp	Ala	Lys	Asp	Asp	Thr	Leu	Glu	Lys		
				1045					1050					1055			
Val	Ile	Glu	Glu	Glu	His	Asp	Ile	Thr	Thr	Thr	Leu	Asp	Glu	Val	Val		
			1060					1065					1070				
Glu	Leu	Lys	Asp	Val	Glu	Glu	Asp	Lys	Ile	Glu	Lys	Val	Ser	Asp	Leu		
		1075					1080						1085				
Lys	Asp	Leu	Glu	Glu	Asp	Ile	Leu	Lys	Glu	Val	Lys	Glu	Ile	Lys	Glu		
	1090						1095				1100						
Leu	Glu	Ser	Glu	Ile	Leu	Glu	Asp	Tyr	Lys	Glu	Leu	Lys	Thr	Ile	Glu		
1105					1110					1115					1120		
Thr	Asp	Ile	Leu	Glu	Glu	Lys	Lys	Glu	Ile	Glu	Lys	Asp	His	Phe	Glu		
				1125					1130					1135			
Lys	Phe	Glu	Glu	Glu	Ala	Glu	Glu	Ile	Lys	Asp	Leu	Glu	Ala	Asp	Ile		
			1140					1145					1150				
Leu	Lys	Glu	Val	Ser	Ser	Leu	Glu	Val	Glu	Glu	Glu	Lys	Lys	Leu	Glu		
		1155					1160						1165				
Glu	Val	His	Glu	Leu	Lys	Glu	Glu	Val	Glu	His	Ile	Ile	Ser	Gly	Asp		
		1170					1175				1180						
Ala	His	Ile	Lys	Gly	Leu	Glu	Glu	Asp	Asp	Leu	Glu	Glu	Val	Asp	Asp		
1185					1190					1195					1200		
Leu	Lys	Gly	Ser	Ile	Leu	Asp	Met	Leu	Lys	Gly	Asp	Met	Glu	Leu	Gly		
				1205					1210				1215				
Asp	Met	Asp	Lys	Glu	Ser	Leu	Glu	Asp	Val	Thr	Ala	Lys	Leu	Gly	Glu		
				1220				1225					1230				
Arg	Val	Glu	Ser	Leu	Lys	Asp	Val	Leu	Ser	Ser	Ala	Leu	Gly	Met	Asp		
				1235			1240						1245				
Glu	Glu	Gln	Met	Lys	Thr	Arg	Lys	Lys	Ala	Gln	Arg	Pro	Lys	Leu	Glu		
					1255						1260						
Glu	Val	Leu	Leu	Lys	Glu	Glu	Val	Lys	Glu	Glu	Pro	Lys	Lys	Lys	Ile		
					1270				1275						1280		

Thr Lys Lys Lys Val Arg Phe Asp Ile Lys Asp Lys Glu Pro Lys Asp
 1285 1290 1295
 Glu Ile Val Glu Val Glu Met Lys Asp Glu Asp Ile Asp Glu Asp Ile
 1300 1305 1310
 Glu Glu Asp Val Glu Glu Asp Ile Glu Glu Asp Lys Val Glu Asp Ile
 1315 1320 1325
 Asp Glu Asp Ile Asp Glu Asp Ile Asp Glu Asp Ile Gly Glu Asp Lys
 1330 1335 1340
 Asp Glu Val Ile Asp Leu Ile Val Gln Lys Glu Lys Arg Ile Glu Lys
 1345 1350 1355 1360
 Val Lys Glu Lys Lys Lys Lys Leu Glu Lys Lys Val Glu Glu Gly Val
 1365 1370 1375
 Ser Gly Leu Lys Lys His Val Asp Glu Val Met Lys Tyr Val Gln Lys
 1380 1385 1390
 Ile Asp Lys Glu Val Asp Lys Glu Val Ser Lys Ala Leu Glu Ser Lys
 1395 1400 1405
 Asn Asp Val Thr Asn Val Leu Lys Gln Asn Gln Asp Phe Phe Ser Lys
 1410 1415 1420
 Val Lys Asn Phe Val Lys Lys Tyr Lys Val Phe Ala Ala Pro Phe Ile
 1425 1430 1435 1440
 Ser Ala Val Ala Ala Phe Ala Ser Tyr Val Val Gly Phe Phe Thr Phe
 1445 1450 1455
 Ser Leu Phe Ser Ser Cys Val Thr Ile Ala Ser Ser Thr Tyr Leu Leu
 1460 1465 1470
 Ser Lys Val Asp Lys Thr Ile Asn Lys Asn Lys Glu Arg Pro Phe Tyr
 1475 1480 1485
 Ser Phe Val Phe Asp Ile Phe Lys Asn Leu Lys His Tyr Leu Gln Gln
 1490 1495 1500
 Met Lys Glu Lys Phe Ser Lys Glu Lys Asn Asn Asn Val Ile Glu Val
 1505 1510 1515 1520
 Thr Asn Lys Ala Glu Lys Lys Gly Asn Val Gln Val Thr Asn Lys Thr
 1525 1530 1535
 Glu Lys Thr Thr Lys Val Asp Lys Asn Asn Lys Val Pro Lys Lys Ser
 1540 1545 1550
 Arg Thr Gln Lys Ser Lys
 1555

<210> 183
 <211> 1014
 <212> PRT
 <213> Plasmodium falciparum

<400> 183
 Met Lys Tyr Phe Lys Lys Phe Lys Tyr Phe Leu Pro Lys Tyr Ile Leu
 1 5 10 15
 Thr Asn Asp Asp Glu Asn Lys Asn Lys Tyr Ala Ser His Lys Ile Tyr
 20 25 30
 Asn Leu Asn Asn Lys Tyr Gly Asn Phe Leu Lys Leu Ile Ile Cys Leu
 35 40 45

Pro Phe Ile Leu Ile Thr Val Leu Trp Ile Phe Leu Thr Ile Ser Ile
 50 55 60
 Phe Val Ser Gln Thr Lys Lys Arg Lys Lys Lys Lys Glu Gln Asn Lys
 65 70 75 80
 Ser Val Met Leu Ile Tyr Tyr Tyr Val Tyr Lys Ser Cys Ile Val Pro
 85 90 95
 Leu Asp Ser Ile Tyr Leu Arg Ser Leu Cys Glu Ser Val Arg Ser Lys
 100 105 110
 Asn Ser Asn Asp Thr Ile Lys Glu Pro Val Leu Lys Asn Lys Val Phe
 115 120 125
 Ser Leu Pro Asn Glu Lys Lys Leu Thr Lys Ser Glu Asp Ile Cys Asp
 130 135 140
 Asn Asn Val Asn Cys Ile Phe Lys Phe Asn Glu Lys Leu Ile Asn Asp
 145 150 155 160
 Leu Glu Lys Tyr Lys Val Ser Asn Glu Asn Asp Val Met Ala Tyr Val
 165 170 175
 Lys Ser Tyr Ser Val Tyr Asn Asn Asn Asn Asn Asn Lys Lys Asp Asp
 180 185 190
 Ile Leu Asp Thr Lys Ile His Asn Ile Gly Lys Asn Gly Glu Asp Ile
 195 200 205
 Ile Lys Thr Met Glu Ile Leu Trp Leu Glu Phe Met Glu Asn Glu Lys
 210 215 220
 Glu Lys Tyr Tyr Leu Leu Lys Gly Arg Leu Tyr Lys Tyr Asn Asn Lys
 225 230 235 240
 Phe Lys Met Glu Asn Lys Tyr Thr Asp Glu Tyr Phe Pro Arg Lys Lys
 245 250 255
 Trp Asn Asn Tyr Asn Asp Leu Ile Tyr Lys Gly Ser Lys Asp Leu Glu
 260 265 270
 Glu Lys Leu Asn Lys Met Phe Tyr Glu Trp Tyr Lys Gln Glu Asn Leu
 275 280 285
 Asn Leu Glu Glu Tyr Arg Arg Leu Thr Val Leu Cys Arg Thr Gly Trp
 290 295 300
 Lys Ala Leu Tyr Asn Tyr Val Glu Asn Ile Cys Lys Glu Ile Ile His
 305 310 315 320
 Ser Asp Leu Asp Ile Ile Lys Asn Lys Lys Gly Ser Asn Met Lys Lys
 325 330 335
 Gly Leu Tyr Asn Asn Glu Tyr Lys Asn Asn Gly Lys Asn Ile Pro Phe
 340 345 350
 Asn Thr Ser Ser Ser Ile Asp Asn Lys Lys Leu Tyr Asn Ser Phe Gly
 355 360 365
 Lys Phe Glu Asn Pro Met Cys Phe Asn Tyr Glu Asp Ser Leu Thr Thr
 370 375 380
 Ser Cys Tyr Ile Asp Glu Asn Lys Ser Asp Ser Ser Tyr Glu Thr Glu
 385 390 395 400
 Glu Asn Val Asn Tyr Asn Asn Lys Met Gly Lys Arg Lys Asn Leu Val
 405 410 415

Glu Ser Gln Ile Val Gly Lys Ser Asn Asn Ile Glu Glu Gly Glu Asn
 420 425 430
 Val Glu Tyr Leu Lys Asn Asn Lys Lys Ile Gly Asp Asp Glu Met Leu
 435 440 445
 Gln Asp Tyr Glu Lys Glu Lys Leu Lys Lys Lys Lys Trp Thr Glu Lys
 450 455 460
 Glu Glu Gln Thr Lys Lys Val Asn Tyr Ser Glu Lys Val Asn His Ser
 465 470 475 480
 Glu Lys Val Asn His Ser Glu Lys Leu Asn His Ser Glu Lys Leu Asn
 485 490 495
 His Ser Glu Lys Leu Asn His Ser Glu Lys Val Asn His Ser Glu Lys
 500 505 510
 Val Asn His Ser Glu Lys Val Asn His Ser Glu Lys Val Asn His Ser
 515 520 525
 Glu Lys Val Asn His Ser Glu Lys Val Asn His Ser Glu Lys Leu Asn
 530 535 540
 His Pro Asn Arg Glu Lys His Ser Gln Lys Glu Lys His Thr Glu Lys
 545 550 555 560
 Asp Asp Lys Arg Asn Asn Phe Lys Lys Asn Asn Asp Val Leu Glu Ile
 565 570 575
 Met Asp Ile Ile Arg Tyr Asp Ser Ser Asp Glu Pro Glu Asn Ser Lys
 580 585 590
 Asn Ile Gly Lys Lys Lys Lys Lys Lys Lys Lys Asn Ile Phe Lys Asn
 595 600 605
 Phe Glu Asn Val Ala Asn Ser Arg Gly Ser Lys Asn Phe Lys Asn Val
 610 615 620
 Phe Ser Arg Asn Lys Tyr Thr Leu Glu Glu Glu Val Asn Ser Val Cys
 625 630 635 640
 Lys Asp Gly Phe Asn Lys Lys Lys Val Leu Ile Lys Val Asn Met Leu
 645 650 655
 Ser Asn Ser Asp Asp Asn Thr Ser Ile Ser Asp Asp Asn Ser Asp Thr
 660 665 670
 Cys Val Asp Arg Thr Tyr Tyr Asp Leu Leu Asn Val Glu Pro Asp Ala
 675 680 685
 Ser Phe Asp Glu Ile Lys His Ser Tyr Arg Lys Leu Ala Leu Gln Tyr
 690 695 700
 His Pro Asp Lys Asn Ile Asn Asp Pro Glu Ala Asn Glu Lys Phe Gln
 705 710 715 720
 Lys Ile Asn Glu Ala Tyr Gln Val Leu Ser Asp Glu Asn Arg Arg Lys
 725 730 735
 Met Tyr Asp Glu Gly Gly Met Lys Ala Thr Glu Asn Met Phe Phe Ile
 740 745 750
 Asp Ala Ala Thr Phe Phe Thr Met Ile Tyr Ser Ser Glu Lys Leu Asn
 755 760 765
 Lys Tyr Ile Gly Ile Leu Lys Ile Thr Thr Phe Val Gln Ile Leu Tyr
 770 775 780
 Glu Asn Lys Ile Ser Ala Asp Lys Leu Asp Asn Ser Lys Asp Leu Ile

785 790 795 800
 Gln Asn Val Leu Val Asn Asp Gln Ile Lys Arg Glu Val Glu Leu Ala
 805 810 815
 Val Leu Leu Lys Glu Arg Leu Gln Pro Tyr Val Asp Gly Asp Glu Asn
 820 825 830
 Trp Val Asp Asn Met Arg Lys Glu Ile Lys Gly Leu Leu Asp Ser Ser
 835 840 845
 Phe Ser Glu Ser Ile Leu Tyr Ser Val Gly Trp Val Tyr Lys Asn Ile
 850 855 860
 Ser Ser Arg Tyr Ile Lys Lys Met Asn Ser Ile Leu Gly Leu Lys Ala
 865 870 875 880
 Val Arg Gly His Met Gln Ala Tyr Leu Arg Cys Ala Glu Asn Ile Tyr
 885 890
 Met Gly Lys Leu Ala Phe Asn Lys Ile Leu Gln Gly Phe Asn Leu Leu
 900 905 910
 Ser Gly Leu Glu Gly Glu Glu Leu Ser Met Lys Leu Gly Asp Ile Ile
 915 920 925
 Cys Asp Ala Leu Arg Leu Met Leu Trp Asp Ile Glu Ser Thr Val Lys
 930 935 940
 Asp Val Ala Lys Arg Val Leu Arg Asp Lys Ala Val Arg Lys Lys Ile
 945 950 955 960
 Arg Leu Lys Arg Ala Glu Ala Met Leu Ile Leu Gly Asn Leu Met Leu
 965 970 975
 Glu Ile Ser Gly Ile Ser Gly Ile Asp Phe Ile His Tyr Lys Val Asp
 980 985 990
 Gly Met Lys Ile Ile Glu Ser Ala Leu Met Lys Ser Ile Gln Phe Ser
 995 1000 1005
 Glu Asn Pro Glu Glu Asn
 1010

<210> 184
 <211> 657
 <212> PRT
 <213> Plasmodium falciparum

<400> 184
 Met Lys Lys Lys Cys Phe Ile Asn Leu Leu Ile Tyr Met Tyr Asn Met
 1 5 10 15
 Thr Leu Ile Cys Gly Ile Pro Tyr Met Phe Leu Met Val Val Cys Val
 20 25 30
 Asn Lys Leu Tyr Ala Phe Phe Ala Tyr Thr Phe Asp Glu Arg His Gln
 35 40 45
 Arg Asn Leu Tyr Thr Ala Glu Cys Leu Ile Lys Asn Lys Glu Ser Tyr
 50 55 60
 Ser Leu Glu Lys Asn Asp Ser Ser Ser Ile Asp Asn Tyr Tyr Lys Ser
 65 70 75 80
 Ile Gln Asn Ala Pro Tyr Ile Asp Glu Asp Ile Val Asp Asn Tyr Lys
 85 90 95
 Gly Glu Leu Lys Glu Leu Ile Lys Ile Asn Lys Asn Asp Ile Ser Asn

390

Asp Ser Asp Asp Phe Ile Ile Ile Asp Glu Lys Asp His Asn Asn Glu
 485 490 495
 Asn Ile Lys Asn Cys Thr Val Leu Phe Asn His Ile Arg Ser Asn Asn
 500 505 510
 Glu Asn Asn Ile Asn Leu Glu Asp Met Thr Arg Asn Val Leu Ile Leu
 515 520 525
 Ile Ile Leu Asp Ile Lys Leu Val Ile Lys Lys Ala Val Glu Arg Val
 530 535 540
 Leu Cys Asp Lys Gly Val Ser Gln Leu Thr Arg Lys Lys Arg Ala Lys
 545 550 555 560
 Gly Leu Met Ser Leu Gly Lys Glu Ile Gln Asn Tyr Thr Gln Lys Ile
 565 570 575
 Arg Asp Lys Asp Tyr Lys Ile Ile Asn Glu Asn Thr Asn Ile Leu Glu
 580 585 590
 Ser Ile Ile Glu Asp Ile Lys Lys Tyr Met Glu Ile Asp Lys Met Asn
 595 600 605
 Phe Leu Lys Glu Lys Gly Lys Lys Glu Ile Asp Lys Ile Phe Tyr Phe
 610 615 620
 Val Gly Asn Asn Ile Tyr Arg Asn Lys Leu Lys Arg Asn Ile Asn Glu
 625 630 635 640
 Lys Cys Arg Leu Leu Lys Phe Leu Lys Tyr Met Ile Asn Ser Thr Glu
 645 650 655
 Glu

<210> 185
 <211> 225
 <212> PRT
 <213> Plasmodium falciparum

<400> 185
 Met Lys Ser Val Lys Met Gly Tyr Ser Asn Asn Lys Phe Asn Ile Phe
 1 5 10 15
 Thr Leu Trp Asn Asn Ile Ile Leu Tyr Phe Ile Leu Ile Val Thr Phe
 20 25 30
 Thr Phe Tyr Asn Lys Tyr Asn Gly Glu Lys Ser Asn Ile Gly Ala Ser
 35 40 45
 Phe Asn Phe Gly Asn Asn Arg Ser Leu Ala Glu Tyr Tyr Asn Asn Lys
 50 55 60
 Asp Gly Tyr Asn Val Leu Arg Val Asn Leu Asp His Lys Asn Leu Lys
 65 70 75 80
 Asp Val Leu Gly Asn Met His Pro Glu Ile Lys Met Val Glu Val Asp
 85 90 95
 Ser Glu Ser Val Cys Pro Gly Thr Asn Glu Val Asn Leu Lys Val Val
 100 105 110
 Thr Asn Ile Pro Pro Asp Met Ile Lys Val Asn Ala Thr Ser Glu Asn
 115 120 125
 Met Ser Val Gly Gln Trp Asp Tyr Ile Met Gln Tyr Tyr Gly Gln Ser
 130 135 140

Thr Pro Lys Glu Val Ser Lys Leu Asp Ser Glu Val Lys Asp Lys Ile
 145 150 155 160
 Glu Lys Lys Ile Lys Lys Lys Lys Arg Lys Thr Pro Leu Ile Arg Tyr
 165 170 175
 Ile Ala Glu Leu Val Gly Tyr Gly Ile Ile Phe Ile Pro Gly Phe Pro
 180 185 190
 Val Leu Val Gly Ile Val Ser Val Gly Phe Cys Ile Leu Ile Phe Met
 195 200 205
 Gly Lys Lys Ser Ala Lys Asn Tyr Phe Ser Thr Ile Lys Lys Trp Leu
 210 215 220
 Phe
 225

<210> 186
 <211> 326
 <212> PRT
 <213> Plasmodium falciparum

<400> 186
 Met Val Ser Ser Val Lys Ser Ser Leu Phe Leu Leu Ile Phe Phe Leu
 1 5 10 15
 Tyr Leu Lys Lys Asn Val Ile Cys Ser Ile Asn Asp Asn Val Asn Glu
 20 25 30
 Asn Ile Thr Glu Gly Leu Asp Glu Tyr Glu Phe Gly Asn Glu Asn Ile
 35 40 45
 Asn Glu Ser Ile Thr Glu Asn Val Asn Val Asn Val Thr Glu Asn Glu
 50 55 60
 Lys Asp Asn Leu Ile Tyr Asn Asp Asp Asn Asn Asn Ile Glu Glu Leu
 65 70 75 80
 Lys Ser Met Ile Gly Asn Asp Glu Leu His Lys Asn Leu Ser Ile Leu
 85 90 95
 Glu Lys Leu Ile Leu Asp Ser Leu Lys Lys Asp Lys Leu Lys Leu Pro
 100 105 110
 Leu Ile Lys Glu Gly Thr Glu Glu Tyr Leu Asp Ile Ser Lys Phe Lys
 115 120 125
 Lys Lys Ile Leu Thr Asp Ser Asp Asp Lys Thr Tyr Ile Leu Pro Thr
 130 135 140
 Leu Glu Ser Ser Phe Tyr Asp Ile Thr Lys Tyr Glu His Ile Leu Lys
 145 150 155 160
 Glu Gln Leu Ile Glu Glu Tyr Asn Ser Lys Ile Ser Asp Ala Val Lys
 165 170 175
 Lys Lys Leu Leu Ile Val Arg Thr Leu Lys Thr Ile Lys Leu Met Leu
 180 185 190
 Ile Pro Leu Asn Ala Tyr Lys Glu Lys Asn Asp Leu Lys Ile Ala Leu
 195 200 205
 Glu Glu Leu Asn Asn Val Ile Thr His Arg Thr Tyr Glu Thr Leu Lys
 210 215 220
 Lys Ser Pro Ile Glu Asn Pro Gly Glu Phe Phe Arg Lys Leu Leu Thr
 225 230 235 240

His Val Lys Glu Val Lys Glu Ser Lys Glu Ile Glu Asn Lys Gly Glu
 245 250 255
 Tyr Leu Ile Leu Gly Asn Asp Lys Ile Glu Ile Met Asp Ala His Asp
 260 265 270
 Phe Phe Phe Thr Thr Asn Ser Asn Ile Lys Phe Met Glu Thr Leu Asp
 275 280 285
 Ser Ile Ser Asn Gln Tyr Gly Leu Gly Leu Ile Asn Asp Leu Gly Pro
 290 295 300
 His Leu Ile Gly Glu Asn Lys Asn Met Ala Tyr Met Asn Ile Ser Ile
 305 310 315 320
 Tyr Ile Arg Ser Leu Leu
 325

<210> 187
 <211> 192
 <212> PRT
 <213> Plasmodium falciparum

<400> 187
 Met Val Leu Lys Leu Ala Leu Lys Asn Tyr Lys Asn Tyr Phe Glu Ala
 1 5 10 15
 Lys Asn Thr Lys Phe Phe Ser Trp Gln Lys Ile Leu Glu Phe Ser Leu
 20 25 30
 Thr Asp Arg Phe Lys Ile Leu Asp Met Met Cys Asp His Asp Val Val
 35 40 45
 Tyr Tyr Ser Gln Asp Lys Arg Arg Lys Thr Tyr Leu Asn Val Asp Thr
 50 55 60
 Ser Gly Ser Ser Met Glu Cys Asn Ile Leu Glu Phe Leu Ile His Tyr
 65 70 75 80
 Phe Asn Lys Tyr Gln Leu Glu Ile Ile Lys Ala Thr Gln Asp Thr Asp
 85 90 95
 Phe Glu Leu His Gly Met Met Glu His Lys Asn Ile Lys Asp Tyr Phe
 100 105 110
 Phe Ser Phe Met Cys Asn Asp Pro Lys Glu Cys Ile Ile Tyr His Thr
 115 120 125
 Asn Gln Phe Lys Lys Glu Ala Lys Glu Glu Asn Thr Phe Pro Glu Glu
 130 135 140
 Pro Asn Arg Glu Ile Ser Ala Tyr Asn Leu Tyr Leu Asn Tyr Tyr Tyr
 145 150 155 160
 Phe Met Lys Arg Tyr Ser Ser Tyr Gly Ile Lys Lys Thr Leu Tyr Val
 165 170 175
 His Leu Leu Asn Leu Thr Gly Leu Leu Ser Asn Asn Lys Asn Ile Tyr
 180 185 190

<210> 188
 <211> 740
 <212> PRT
 <213> Plasmodium falciparum

<400> 188
 Met Lys Ser Ser Thr Leu Glu Lys Met Lys Lys Ser Ile Asn Phe Leu
 1 5 10 15
 Val His Val Asn Ser Phe Leu Gln Leu Asp Phe Phe His Gln Leu Asn
 20 25 30
 Glu Pro Pro Val Gly Leu Pro Arg Ser Tyr Pro Leu Ser Leu Ile Leu
 35 40 45
 Glu His Lys Phe Lys Glu Trp Met Asn Ser Ser Pro Ala Gly Phe Tyr
 50 55 60
 Phe Ser Asn Tyr His Asn Pro Tyr Ile Arg Lys Glu Leu His Arg Lys
 65 70 75 80
 Val Leu Thr Glu Lys Phe Glu Pro Pro Lys Met Asn Lys Trp Asn Glu
 85 90 95
 Val Leu Lys Ser Leu Ile Glu Cys Ala Tyr Asp Met Tyr Phe Glu Gln
 100 105 110
 Arg His Val Lys Asn Leu Tyr Lys Asn His Asn Ile Tyr Asn Ile Asn
 115 120 125
 Asn Lys Ile Met Leu Met Arg Asp Ser Val Asp Leu Tyr Lys Lys Asn
 130 135 140
 Phe Lys Asp Val Ile Phe Phe Ala Asp Ile Phe Asn Leu Arg Lys Tyr
 145 150 155 160
 Leu Thr Ala Thr Pro Leu Ile Lys Lys Thr Trp Asp Arg Met Tyr Tyr
 165 170 175
 Phe Ile Tyr Arg Asn Thr Gly Asn Ser Val Asn Phe Tyr Lys Tyr Gly
 180 185 190
 Ile Ile Tyr Gly Phe Lys Ile Asn Lys Val Tyr Leu Lys Glu Val Val
 195 200 205
 Asp Glu Leu Tyr Ser Ile Tyr Asn Phe Asn Thr Asp Ile Phe Ser Asp
 210 215 220
 Thr Ser Phe Leu Gln Thr Val Tyr Leu Leu Phe Arg Lys Ile Glu Asp
 225 230 235 240
 Ser Tyr Arg Thr His Arg Arg Asn Asp His Ile Gly Val Asn Asn Ile
 245 250 255
 Phe Phe Met Asn Val Ala Asn Asn Tyr Ser Lys Leu Asn Asn Glu Glu
 260 265 270
 Arg Glu Met Glu Ile His Asn Ser Met Ala Ser Arg Tyr Tyr Ser Lys
 275 280 285
 Thr Met Phe Ala Ala Phe Gln Met Leu Phe Ser Thr Met Leu Ser Asn
 290 295 300
 Asp Ala Asn Asn Leu Asp Lys Val Tyr Gly Lys Ser Ser Asn Ile Gln
 305 310 315 320
 Val Ala Thr Ser Thr Thr Ala Phe Leu Thr Phe Ala Tyr Val Tyr Asn
 325 330 335
 Gly Ser Ile Met Asp Ser Leu Thr Asn Arg Leu Leu Pro Pro Tyr Ala
 340 345 350
 Lys Lys Pro Ile Thr Gln Leu Lys Tyr Gly Lys Thr Phe Val Phe Ser
 355 360 365

Asn Tyr Phe Met Leu Ala Ser Gln Ile Tyr Glu Met Leu Asn Tyr Lys
 370 375 380
 Asn Leu Ser Leu Leu Cys Glu Tyr Gln Ala Val Ala Ser Ala Asn Tyr
 385 390 395 400
 Tyr Ser Ala Lys Lys Leu Gly Gln Phe Val Gly Arg Lys Tyr Phe Pro
 405 410 415
 Leu Thr Thr Tyr Tyr Leu Ser Leu Arg Ile Arg Ala Ser Tyr Gly Trp
 420 425 430
 Val His Gly Thr Glu Thr Lys Ile Cys Asn Ser Glu Gly Val Ser Cys
 435 440 445
 Ser Arg Lys Gly Pro Thr Pro Gly Lys Phe Phe Phe Asn Trp Lys Ser
 450 455 460
 Asp Ala Pro Ile Tyr Leu Tyr Phe Tyr Phe Phe Ser Asn Leu Tyr Leu
 465 470 475 480
 Asp Ser Ala Lys Tyr Phe Pro Gly Gly Phe Ser Thr Ser Leu Lys Glu
 485 490 495
 Gln Thr Glu His Val Ser Gln Lys Gly Phe Lys Lys Lys Pro Met Val
 500 505 510
 His Glu Leu Thr Lys Asn Leu Ile Leu Asp Val Thr Asn Gly Phe Met
 515 520 525
 Tyr Ala Phe Cys Phe Tyr Ser Ile Met Pro Leu Tyr Ala Tyr Phe Glu
 530 535 540
 Asn Val Asn Phe Tyr Ile Ile Ser Asn Phe Arg Phe Leu Asp Arg Tyr
 545 550 555 560
 Tyr Asn Ala Phe Asn Lys Tyr Phe Ile Asn Phe Phe Lys Thr Lys Leu
 565 570 575
 Lys Lys Tyr Thr Thr Asp Val Phe Ile Lys Tyr Glu Tyr Asp Ala Tyr
 580 585 590
 Thr Ser Met Lys Lys Tyr Gly Tyr Leu Asn Glu Val Ile Gly Ser Arg
 595 600 605
 Leu Ser Ser Lys Asn Arg Ile Val Lys Tyr Ile Tyr Asp Ser Asn Asp
 610 615 620
 Asp Ile Met Asn Asn Leu Arg Arg Tyr Asp Met Glu Asn Arg Phe Arg
 625 630 635 640
 Asn Lys Met Ser Thr Tyr Val Asp Glu Tyr Ala Phe Phe Asp Asp Cys
 645 650 655
 Gly Lys Asn Glu Val Phe Leu Asn Asp Arg Cys Asp Tyr Cys Pro Ile
 660 665 670
 Val Glu Asp Leu Cys Glu Pro Asp Thr Lys Glu Tyr Gln Pro His Thr
 675 680 685
 Ser Asn Ile Gln Lys Val Thr Asp Lys Asn Thr Thr Tyr Ile Asn Tyr
 690 695 700
 Glu Lys Leu His Glu Glu Ser Tyr Ser Gln Glu Thr Gln Ser Asp Asn
 705 710 715 720
 Thr Asp Asp Glu Lys Asp Asn Asp Leu Pro Asp Thr Glu Leu Met Ile
 725 730 735

Thr Arg Leu Gln
740

<210> 189
<211> 248
<212> PRT
<213> Plasmodium falciparum

<400> 189
Met Pro Lys Asn Asp Thr Leu Tyr Asp Asn Phe Val Lys Tyr Asn Lys
1 5 10 15
Lys Ile Tyr Lys Lys Asn Leu Asn Asn Gly Lys Asp Asp Lys Lys Tyr
20 25 30
Ser Arg Asn Met Leu Asn Asn Lys Tyr Ser Glu Asp Leu Phe Glu Ser
35 40 45
Val Asn Met Val Glu Trp Cys Tyr Tyr Lys Asn Asp Met Ile Lys Glu
50 55 60
Arg Asn Val Ile Ser Glu Ser Asn Thr Val Trp Lys Lys Pro Ser Trp
65 70 75 80
Met Thr Arg Phe Lys Asn Lys Leu Tyr Lys Met Ile Phe Lys Lys Asn
85 90 95
Lys Phe Trp Lys Phe Ile Ser Gly Ile Ile Thr Val Leu Gly Asn Ser
100 105 110
Ala Ile Ile Cys Glu Ile Ile Met Leu Ile Gly Tyr Ile Ile Lys Tyr
115 120 125
Phe Met Cys Phe Cys Ser Cys Ala Tyr Ser Cys Leu Cys Ser Cys Ile
130 135 140
Cys Ser Cys Ser Ser Leu Cys Ser Cys Ile Cys Ser Cys Ile Cys Ser
145 150 155 160
Cys Ile Cys Ser Cys Ile Cys Thr Cys Thr Cys Ile Cys Ser Cys Leu
165 170 175
Cys Ser Cys Ile Cys Ser Cys Val Cys Ser Cys Val Cys Ser Ser Ala
180 185 190
Cys Thr Cys Ala Cys Val Tyr Thr Ser Val Ile Gly Ser Thr Leu Ile
195 200 205
Ala Val Ser Ala Gly Ile Leu Ala Ala Ile Ile Leu Leu Ile Ile Leu
210 215 220
Thr Ile Ile Ile Val Trp Leu Leu Val Thr Trp Leu Trp Ser His Lys
225 230 235 240
Asp Glu Tyr Tyr Lys Thr Ser Glu
245

<210> 190
<211> 307
<212> PRT
<213> Plasmodium falciparum

<400> 190
Met Asn Ile Tyr Tyr Ile Asn Met Leu Val Met Ser Ile Leu Leu Ile
1 5 10 15
Val Leu Phe Leu Ser Tyr Asn Val Asn Asn His Asn Lys Lys Tyr Asn
20 25 30

Val Gly Tyr Ile Gln Asn Asn Arg Gln Met Ile Met Met Lys Ser Arg
 35 40 45
 Arg Leu Ala Glu Ile Gln Leu Pro Lys Cys Pro His Tyr Asn Asn Asp
 50 55 60
 Pro Glu Leu Lys Lys Ile Ile Asp Lys Leu Asn Glu Glu Arg Ile Lys
 65 70 75 80
 Lys Tyr Ile Glu Thr Asn Asn Ser Phe Glu Glu Leu His Gly Leu Leu
 85 90 95
 Val Lys Glu Arg Thr Lys Ser Leu Tyr Glu Asn Gly Met Lys Lys Ser
 100 105 110
 Ser Asn Met Glu Lys Glu Leu Leu Lys Lys Tyr Asp Asp Ser Ile Arg
 115 120 125
 Asp Glu His Asn Val Ile Ser Lys Ser Gly Ile Tyr Thr Ser Asp Tyr
 130 135 140
 Arg Lys Leu Tyr Asp Lys Ser Cys Asp Tyr Gln Asn Gln Lys Ile Leu
 145 150 155 160
 Arg Asp Glu Leu Ala Ser Cys Cys Lys Val His Asp Asn Tyr Leu Asp
 165 170 175
 Asn Leu Lys Lys Gly Cys Phe Gly Gly Val Gly Ile Cys Thr Leu Cys
 180 185 190
 Ser Leu Leu Val Ser Asn Ile Gly Ile Gly Tyr Ala Val Thr Ala Ala
 195 200 205
 Lys Glu Val Ile Thr Gly Leu Tyr Ser Leu Asp Ile Ala Asn Lys Phe
 210 215 220
 Thr Lys Ala Leu Ala Gly Ile Tyr Phe Phe Phe Ser Ser Ser Ile Glu
 225 230 235 240
 Asn Ala Gly Val Ser Gly Val Thr Ile Phe Tyr Trp Asp Ser Met Arg
 245 250 255
 Met Ala Ser Ile Ala Ser Ser Thr Ile Asn Pro Tyr Gly Ile Ala Ala
 260 265 270
 Leu Val Leu Ile Val Leu Val Val Val Leu Ile Val Leu Tyr Ile Trp
 275 280 285
 Leu Tyr Arg Arg Arg Lys Lys Ser Trp Lys His Glu Cys Lys Lys His
 290 295 300
 Leu Ser Thr
 305

<210> 191
 <211> 109
 <212> PRT
 <213> Plasmodium falciparum

<400> 191
 Met Asn Leu Lys Lys Tyr Ser Lys Asn Glu Glu Cys Lys Glu Asn Met
 1 5 10 15
 Asp Asn Tyr Leu Met Tyr Leu Arg Met Gln Asp Asp Ile Lys Tyr Leu
 20 25 30
 Glu Arg Asn Asn Thr Trp Asn Asn Ile Trp Ile Val Thr Met Thr Leu
 35 40 45

Phe Leu Ile Ile Ile Met Ile Ala Cys Ile Phe Ser Val Gly Ile Thr
 50 55 60
 His Ala Ser Ala Phe Tyr Pro Ala Leu Phe Leu Ala Val Phe Leu Ile
 65 70 75 80
 Tyr Met Tyr Ala Arg Phe Phe Pro Lys Ile Lys Ile Thr Phe Thr Glu
 85 90 95
 Leu Lys Lys Lys Leu Tyr Lys Phe Phe Gln Lys Lys Lys
 100 105

<210> 192
 <211> 136
 <212> PRT
 <213> Plasmodium falciparum

<400> 192
 Met Glu Asn Gln Met Gln Asp His Ile Asp Asp Ser Ile Asp Asn Pro
 1 5 10 15
 Met Asp Asp Ser Met Asn Asp Lys Leu Glu His Asn Asn Ser Leu Glu
 20 25 30
 Asp Ser Ile Lys Glu Tyr Tyr Thr Leu Thr Asn Pro Ser Val Asp Glu
 35 40 45
 Glu Asn Lys Ser Phe Phe Lys Lys Leu Lys Leu Ile Met Asn Ile Leu
 50 55 60
 Asp Asp Val His Ser Asp Leu Leu Val Asn Asn Asn Val Thr Asp Gly
 65 70 75 80
 Ser Ile Phe Ser Leu Glu Leu Val Pro Ile Ser Leu Leu Leu Thr Lys
 85 90 95
 Ala Leu Thr Cys Pro Leu Ile Gly Thr Val Thr Leu Ser Tyr Ile Thr
 100 105 110
 Ser Arg Ile Asn Phe Leu Asn Lys Tyr Glu Gly Glu Asn Ile Tyr Thr
 115 120 125
 Lys His Glu Ser Lys Ile Phe Lys
 130 135

<210> 193
 <211> 302
 <212> PRT
 <213> Plasmodium falciparum

<400> 193
 Met Gln Arg Lys Arg Tyr Asn Asn Phe Tyr Ile Lys Ala Glu Arg Asp
 1 5 10 15
 Phe Gln Asn Ser Leu Tyr Lys Leu Asn Asp Lys Asn Val Lys Ser Cys
 20 25 30
 Glu Phe Glu Asn Lys Met Lys Ser Ser Asp Lys Leu Ser Ser Ser Asn
 35 40 45
 Glu Ala Asp Glu Pro Asn Lys Met Gln Glu Pro Asn Ile Ile Glu Glu
 50 55 60
 Ser Asn Ile Ile Glu Glu Pro Asn Lys Ile Glu Glu Gln Asn Ile Ile
 65 70 75 80
 Glu Glu Ser Asn Lys Ile Glu Glu Ser Asn Lys Ile Glu Glu Pro Asn
 398

85										90					95				
Ile	Ile	Glu	Glu	Ser	Asn	Glu	Ile	Glu	Glu	Ser	Asn	Lys	Ile	Glu	Glu				
		100						105					110						
Ser	Asn	Ile	Ile	Glu	Pro	Asn	Ile	Ile	Glu	Glu	Ser	Asn	Thr	Ile	Glu				
		115					120					125							
Glu	Ser	Asn	Lys	Ile	Glu	Glu	Ser	Asn	Ile	Ile	Glu	Pro	Asn	Ile	Ile				
	130					135					140								
Glu	Glu	Ser	Asn	Thr	Ile	Glu	Glu	Ser	Asn	Lys	Ile	Glu	Glu	Ser	Asn				
145				150						155					160				
Ile	Ile	Glu	Glu	Ser	Asn	Thr	Ile	Glu	Glu	Gln	Asn	Lys	Ile	Glu	Lys				
				165				170					175						
Val	Asn	Gln	Thr	Lys	Ser	Pro	Leu	Arg	Asn	His	Gln	Ile	Gln	Ile	Asn				
			180					185					190						
Asn	Thr	Ile	Asp	Lys	Ile	Ile	Gln	Asn	Ser	Asn	Gly	Asp	Glu	Lys	Leu				
		195					200					205							
Gln	Arg	Leu	Lys	Ser	Thr	Ser	Trp	Leu	Ile	Asn	Asn	Met	Glu	Ser	Ser				
	210					215					220								
Glu	Glu	Val	Lys	Gln	Arg	Leu	Arg	Gly	Leu	Ala	Gln	Ser	Tyr	Ile	Tyr				
225				230						235					240				
Asn	Pro	Asp	Glu	Ser	Lys	Lys	Arg	Lys	Ile	Ile	Lys	Glu	Ile	Tyr	Lys				
				245					250					255					
Tyr	Ser	Lys	Lys	Glu	Glu	Asn	Asn	Asp	Ile	Lys	Asn	Met	Phe	Leu	Lys				
			260					265					270						
Ile	Leu	Lys	Cys	Arg	Asp	Leu	Ser	Asn	Thr	Glu	Pro	Arg	Glu	Tyr	His				
	275						280					285							
Leu	Pro	Leu	Gln	Gly	Leu	Ser	Arg	Pro	Cys	Tyr	Leu	Phe	Val						
	290					295					300								

<210> 194

<211> 101

<212> PRT

<213> Plasmodium falciparum

<400> 194

Asn	Asn	Leu	Ser	Asn	Asp	Val	Ser	Gly	Ile	Cys	Thr	Val	Met	Lys	Tyr			
1				5					10					15				
Ser	Phe	Ala	Asp	Leu	Arg	Asp	Ile	Ile	Lys	Gly	Thr	Asp	Leu	Trp	Asp			
			20					25					30					
Gln	Asn	Asn	Asp	Ala	Lys	Arg	Leu	Gln	Glu	Asn	Phe	Lys	Ile	Ile	Tyr			
			35				40					45						
Gly	Lys	Ile	Lys	Gly	Thr	Leu	Gly	Ala	Lys	Tyr	Ala	Arg	Asp	Asp	Pro			
	50					55					60							
Pro	Tyr	Thr	Asn	Leu	Arg	Gln	Asn	Trp	Trp	Glu	Ala	Met	Lys	Cys	Arg			
65					70					75					80			
Ile	Pro	Glu	Leu	Arg	Ala	Val	Pro	Asp	Lys	Gln	Gly	Tyr	Leu	Arg	His			
				85					90					95				
Lys	Leu	Glu	Cys	Ser														
			100															

<210> 195
 <211> 282
 <212> PRT
 <213> Plasmodium falciparum

<400> 195
 Met Ile Ile Ile Val Pro Phe Ile Phe Phe Asn Leu Ile Phe Thr Ser
 1 5 10 15
 Asp Met Met Tyr Glu Tyr Ile Glu Asn Thr Lys Val Pro Ile Phe Val
 20 25 30
 Lys Leu Phe Phe Gly Lys Ser Ile Phe Ile Glu Asp Ile Phe Tyr Tyr
 35 40 45
 Val Gly Met Ile Met Lys Glu Met Met Glu Gly Gln Asn Ile Arg Glu
 50 55 60
 Glu Glu Val Ala Glu Leu Leu Lys Asp Arg Leu Asp Leu Tyr Ile Asp
 65 70 75 80
 Asn Glu Asp Glu Trp Glu Lys Leu Met Glu Asn Glu Ile Ser Met Leu
 85 90 95
 Leu Lys Ser Ser Phe Ser Asn Phe Ile Leu Glu Ser Ile Gly Trp Thr
 100 105 110
 Tyr Glu Asn Val Ser Asn Ile Phe Leu Glu Glu Lys Ala Asn Ser Gly
 115 120 125
 Ile Asn Lys Lys Asp Ile Tyr Leu Lys Glu Ala Asn Glu Arg Met Ile
 130 135 140
 Arg Asn Ser Ile Val Leu Arg Gln Cys Lys Ser Arg Phe Ile Ser Ile
 145 150 155 160
 Ile Thr Asn Tyr Tyr Pro Phe Lys Glu Gln Asn Asn Pro Phe Ile Lys
 165 170 175
 Gln Ala Gln Tyr Val Ser Ser Ser Asn Tyr Val Leu Asp Asp Ile Ile
 180 185 190
 Asn Asn Ile Asp Tyr Ser Ile Asp Asn Ile His Arg Ala Ile Asp Asn
 195 200 205
 Leu Tyr Tyr Glu His Ile Leu Asn Leu Leu Glu Glu Glu Lys Asn Glu
 210 215 220
 Ile Leu Glu Glu Ile Leu Arg Asn Ile Leu Lys Ile Ile Leu Cys Asp
 225 230 235 240
 Val Glu Thr Thr Val Arg Arg Ser Ala Gln Lys Val Leu Gln Asn Ala
 245 250 255
 Glu Gly Asp Thr Asn Leu Met Leu Lys Arg Ala Lys Gly Leu Gln Ser
 260 265 270
 Leu Gly Lys Met Ile Leu Gln Lys Val Asn
 275 280

<210> 196
 <211> 186
 <212> PRT
 <213> Plasmodium falciparum

<400> 196
 Met Leu Ala Gln Lys Asn Thr Asn Lys Lys Pro Phe Gly Asn Thr Leu
 1 5 10 15

Thr Asn Ile Leu Phe Lys Asp Lys Lys Lys Lys Asn Leu Asp Pro Gln
 20 25 30
 Ile Ser Ser Leu Val Ser Leu Val Asp Asn Met Asp Ile Thr Gln Glu
 35 40 45
 Lys Lys Asp Lys Ile Lys Asn Leu Ser Leu Lys Tyr Ile Asn Ser Arg
 50 55 60
 Asp Val Lys Glu Lys Asn Glu Ser Ile Asn Glu Leu Gln Lys Tyr Ser
 65 70 75 80
 Asn Asn Glu Glu Cys Lys Glu Tyr Met Asp Ser Tyr Leu Met His Leu
 85 90 95
 Arg Met Gln Asn Asp Ile Lys Cys Leu Lys Arg Lys Asn Leu Trp Asn
 100 105 110
 Asn Ile Trp Ile Val Ser Thr Thr Leu Leu Leu Ile Ile Ile Met Ile
 115 120 125
 Ala Cys Ile Ile Val Cys Thr Pro Glu Thr Tyr Thr Ala Leu Tyr Pro
 130 135 140
 Ala Phe Ile Leu Leu Ile Phe Ile Ile His Ile Val Ala Arg Tyr Phe
 145 150 155 160
 Pro Asp Met Lys Ile Gly Phe Lys Lys Leu Lys Thr Lys Leu Asn Thr
 165 170 175
 Phe Phe Gln Asn Lys Lys Gln Ile Thr Lys
 180 185

<210> 197

<211> 230

<212> PRT

<213> Plasmodium falciparum

<400> 197

Met Asn Tyr Phe Leu Ser Leu Phe Asn Val Ser Leu Phe Phe Leu Leu
 1 5 10 15
 Ile Phe Lys Tyr Ser Tyr Lys Asn Ile Val Lys Lys Asp Leu Gln Asp
 20 25 30
 Lys Phe Asn Lys Ser Ile Ile Thr Ile Asn Ile Ala Ser Arg Ile Leu
 35 40 45
 Thr Glu Asn Asn Lys Lys Trp Tyr Lys Lys Tyr Ile Tyr Thr Ser Ile
 50 55 60
 Phe Ser Gly Asn Lys Asn Pro Gln Lys Arg Glu Arg Lys Asn Glu Glu
 65 70 75 80
 Glu Asn Gln Lys Asp Asn Thr Lys Val Asp Asn Asp Asn Asn Met Glu
 85 90 95
 Asn Glu Met Glu Asn His Ile Asp Asp Ser Ile Asp Asp Pro Met Asp
 100 105 110
 Asp Leu Met Asn Asp Lys Trp Glu His His Asn Ser Leu Glu Asp Arg
 115 120 125
 Ile Lys Glu Tyr Tyr Thr Leu Thr Asp Pro Ser Asp Gly Glu Glu Asn
 130 135 140
 Asn Ser Phe Phe Lys Lys Leu Lys Leu Ile Met Asn Ile Leu Asp Glu
 145 150 155 160

Val His Ser Asp Leu Leu Ile Asn Asn Ser Val Thr Asp Gly Ser Ile
165 170 175

Phe Ser Pro Glu Leu Val Pro Ile Ser Val Leu Ser Thr Met Thr Leu
180 185 190

Ala Cys Pro Pro Ile Gly Thr Val Thr Leu Pro Tyr Ile Thr Asn Arg
195 200 205

Ile Asn Phe Leu Asn Arg Tyr Glu Gly Gln Asn Ile His Thr Glu His
210 215 220

Asp Leu Lys Ile Phe Lys
225 230

<210> 198

<211> 257

<212> PRT

<213> Plasmodium falciparum

<400> 198

Met Val Glu Glu Pro Phe Glu Lys Lys Asp Lys Ser Gly Val Leu Leu
1 5 10 15

Lys Asp Lys Asn Thr Glu Glu Gly Arg Lys Lys Glu Arg Gln Lys Pro
20 25 30

Met Ser Ile Lys Ser Ile Asn Lys Lys Lys Lys Lys Asn Asn Asn Asn
35 40 45

Asn Asn Asn Asn Asn Val Leu Lys Asn Leu Asn Asn Glu Glu Ile Asn
50 55 60

Lys Gln Arg Asn Met Thr Asn Glu Arg Ile Arg Asn Lys Asn Lys Asn
65 70 75 80

Asp Lys Gly Val Glu Asn Ile Ser Ser Asn Thr Gln Met Glu Glu Lys
85 90 95

Asn Ile Ile Cys Lys Asp Ile Asn Ser Asn Val Ile Leu Asn Gln Asn
100 105 110

Glu Ile Asn Asp Asp Gln Met Val Gln Lys Ile Lys Glu Asn Phe Val
115 120 125

Lys Asp Leu Met Lys Asn Glu Asn Lys Glu Ile Phe Lys Gln Ile Glu
130 135 140

Thr Ile Asn Ser Val Gly Thr Met Ala Lys Ile Lys Asn Ser Leu Tyr
145 150 155 160

Ser Ile Ile Phe Lys Gly Ser Asn Phe Trp Lys Gly Leu Gly Ile Tyr
165 170 175

Leu Cys Thr Leu Ser Gly Ala Ala Leu Gly Gln Leu Ile Leu Ala Gly
180 185 190

Ile Leu Gln Phe Gly Thr Phe Ser Val Met Asn Phe Ser Ile Tyr Phe
195 200 205

Ser Ala Val Pro Ser Phe Ile Ala Phe Ser Ser Phe Val Gly Ile Ile
210 215 220

Leu Leu Ser Ile Ile Ile Val Ile Cys Leu Leu Val Trp Leu Trp Pro
225 230 235 240

Ser Arg Gly Lys Leu Met Gly Lys Asp Lys Thr Glu Asn Lys Ser Asp
245 250 255

Thr

<210> 199
 <211> 307
 <212> PRT
 <213> Plasmodium falciparum

<400> 199

Glu Leu Tyr Thr Ser Ile Tyr Asp Asp Asp Pro Glu Met Lys Glu Ile
 1 5 10 15
 Met His Asp Phe Asp Arg Gln Thr Ser Gln Arg Phe Glu Glu Tyr Asn
 20 25 30
 Glu Arg Met Asn Lys Asn Arg Gln Lys Cys Lys Glu Gln Cys Asp Arg
 35 40 45
 Asp Ile Lys Asn Ile Ile Leu Lys Asp Lys Ile Glu Lys Glu Leu Lys
 50 55 60
 Gln Gln Leu Ala Thr Leu Glu Thr Asp Ile Ser Thr Asp Asp Ile Pro
 65 70 75 80
 Thr Cys Val Cys Asn Lys Ser Val Ala Asp Lys Val Glu Lys Thr Cys
 85 90 95
 Leu Lys Cys Gly Gly Val Leu Gly Gly Ala Val Pro Glu Leu Gly Leu
 100 105 110
 Leu Cys Gly Tyr Gly Ala Tyr Glu Leu Val Lys Val Ala Ile Gly Ala
 115 120 125
 Ala Glu Lys Ala Ala Ile Ala Glu Gly Ala Lys Ala Gly Ile Ala Glu
 130 135 140
 Gly Ile Arg Val Ala Ile Lys Gly Ile Lys Asp Ala Phe Asn Ile Glu
 145 150 155 160
 Phe Leu Asp Gly Lys Thr Leu Ala Glu Val Ile Thr Gly Lys Thr Phe
 165 170 175
 Asn Asn Ser Thr Phe Phe Val Glu Lys Phe Val Gln Glu Tyr Asn Thr
 180 185 190
 Val Cys Leu Ser Ser Thr Thr Tyr Gln Asp Thr Leu Phe Cys Asp Tyr
 195 200 205
 Gly Ser Met Phe Gly Gly Lys Val Asp Asn Ile Thr Ala Ile Ser Leu
 210 215 220
 Asn Ala Lys Asn Thr Ala Ile Lys Ala Gly Gln Ala Ala Ala Lys Met
 225 230 235 240
 Thr Thr Glu Thr Thr Lys Ala Leu Thr Ala Glu Lys Thr Gly Glu Val
 245 250 255
 Thr Ser Thr Ser Ala Ile Phe Ser Asn Pro Met Val Ile Ser Phe Ile
 260 265 270
 Val Val Val Ile Ile Val Ile Ile Leu Leu Ile Ile Tyr Leu Ile Leu
 275 280 285
 Arg Tyr Arg Arg Lys Lys Lys Met Lys Arg Lys Leu Gln Tyr Ile Lys
 290 295 300
 Leu Leu Glu
 305

<210> 200
 <211> 316
 <212> PRT
 <213> Plasmodium falciparum

<400> 200
 Met Lys Met His Tyr Ser Glu Ile Leu Phe Phe Ser Leu Ser Leu Asn
 1 5 10 15
 Ile Leu Ile Thr Ser Ser Tyr Ala His Ser Glu Asn Lys Gln Tyr Ile
 20 25 30
 Thr Pro Tyr Thr Pro Asn Thr Ser Arg Val Leu Thr Glu Cys Asp
 35 40 45
 Ile Lys Met Ser Ile Tyr Asp Asn Asp Gly Asp Met Lys Ser Val Lys
 50 55 60
 Glu Asn Phe Asp Arg Gln Thr Ser Glu Arg Phe Glu Glu Tyr Asp Glu
 65 70 75 80
 Arg Met Lys Asp Lys Arg Arg Lys Cys Lys Glu Gln Cys Asp Lys Asp
 85 90 95
 Ile Gln Glu Ile Ile Val Lys Asp Lys Met Glu Lys Ser Leu Ala Lys
 100 105 110
 Lys Val Glu Lys Gly Cys Leu Arg Cys Gly Cys Gly Leu Gly Gly Val
 115 120 125
 Ala Ala Ser Val Gly Ile Ile Gly Pro Ile Ala Val Asn Glu Val Lys
 130 135 140
 Lys Ala Ala Leu Val Ala Ala Ala Gln Lys Gly Ile Glu Val Gly Met
 145 150 155 160
 Ala Lys Ala Ile Glu Glu Leu Gly Lys Ile Val Gly Leu Ser Asp Phe
 165 170 175
 Ser Tyr Leu Asn Trp Ser Ala Met Ile Thr Ala Thr Thr Tyr Tyr Lys
 180 185 190
 Pro Met Lys Leu Val Asn Ile Val Asn Ser Ala Asn Ser Met Cys Thr
 195 200 205
 Asp Ser Asn Pro Ala Phe Thr Ser Leu Phe Cys Lys Ala Ser Tyr Arg
 210 215 220
 Ile Asn Ser Glu Val Ser Ser Ser Arg Phe Thr Glu Val Ile Ser Gln
 225 230 235 240
 Glu Ala Ala Lys Ala Ala Ser Ala Ala Gly Glu Ala Ala Lys Asn Ala
 245 250 255
 Glu Lys Ala Gln Ile Ala Leu Val Asn Glu Glu Ser Ala His Leu Tyr
 260 265 270
 Ser Ala Ile Gly Tyr Ser Val Ile Ala Ile Leu Ile Ile Leu Leu Val
 275 280 285
 Met Val Ile Ile Tyr Leu Ile Leu Arg Tyr Arg Arg Lys Lys Lys Met
 290 295 300
 Asn Lys Lys Leu Gln Tyr Thr Lys Leu Leu Asn Gln
 305 310 315

<210> 201
 <211> 368

<212> PRT

<213> Plasmodium falciparum

<400> 201

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Met Lys Val His Tyr Met Asn Ile Leu Leu Phe Ala Leu Pro Leu Asn
 1          5          10          15

Ile Leu Glu His Asn Glu Arg Asp His Asn Asn Thr Thr Leu His Thr
          20          25          30

Ser Ile Thr Arg Ser Leu Cys Glu Phe Glu Leu Tyr Glu Pro Ala Asn
          35          40          45

Tyr Asp Asn Asp Gln Glu Met Lys Glu Val Met Gln Gln Phe Glu Val
          50          55          60

Arg Thr Ser Gln Arg Phe His Glu Tyr Asp Glu Ser Leu Gln Ser Lys
          65          70          75          80

Arg Lys Gln Cys Lys Asp Gln Cys Asp Lys Glu Ile Gln Lys Ile Ile
          85          90          95

Leu Lys Asp Lys Leu Glu Lys His Met Ala Gln Gln Leu Ser Thr Leu
          100          105          110

Glu Thr Arg Ile Thr Thr Asp Asp Ile Pro Thr Cys Val Cys Glu Lys
          115          120          125

Ser Met Ala Asp Lys Val Glu Lys Gly Cys Leu Arg Cys Gly Cys Ile
          130          135          140

Leu Gly Ala Ala Met Pro Glu Leu Gly Ser Val Gly Gly Ser Leu Leu
          145          150          155          160

Tyr Ala Leu Asn Thr Trp Lys Pro Val Ala Leu Lys Ala Ala Ile Ala
          165          170          175

Ala Ala Asn Lys Ala Gly Met Ala Ala Gly Ile Lys Ala Gly Asp Ala
          180          185          190

Ala Gly Met Asn Val Val Ile Val Gln Leu Gly Lys Trp Gly Ile Asn
          195          200          205

Glu Phe Cys Pro Glu Ile Phe Glu Ser Ile Leu Lys Ile Asn His Tyr
          210          215          220

Ser Lys Leu Lys Asp Phe Ala Ser Ala Ile Val Ala Glu His Asp Lys
          225          230          235          240

Ile Cys Ala Ile Thr Thr Ser Gly Glu Asn Ser Met Cys Leu Pro Phe
          245          250          255

Asp Ile Ala Leu Gly Leu Ser Asp Ala Lys Gly Thr Pro Ile Gly Pro
          260          265          270

Pro Ala Ser Gln Ala Ile Pro Lys Met Met Asn Gln Leu Val Gly Lys
          275          280          285

Ala Lys Gly Thr Ala Asp Phe Met Ala Asn Lys Val Asn Ser Glu Thr
          290          295          300

Tyr Ser Lys Ile Ile Thr Lys Gln Ala Asp Leu Ile Glu Ala Gly Phe
          305          310          315          320

Asn Ser Cys Thr Thr Ser Ile Tyr Ala Ser Ile Ile Val Ile Leu Ile
          325          330          335

Ile Val Leu Ile Met Val Ile Ile Tyr Leu Ile Leu Arg Tyr Arg Arg
          340          345          350

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Lys Lys Lys Met Lys Lys Lys Leu Gln Tyr Ile Lys Leu Leu Glu Glu
 355 360 365

<210> 202

<211> 348

<212> PRT

<213> Plasmodium falciparum

<400> 202

Met Lys Leu His Tyr Thr Lys Ile Leu Leu Phe Phe Phe Pro Leu Asn
 1 5 10 15
 Ile Leu Leu Thr Ser Tyr His Ala His Asn Lys Asn Lys Pro Tyr Ile
 20 25 30
 Thr Ser Arg His Arg Gln Thr Ser Thr Ser Arg Val Leu Ser Glu Ser
 35 40 45
 Asp Pro Tyr Met Leu Asn Tyr Asp Asn Asp Asp Asp Met Lys Ser Val
 50 55 60
 Lys Glu Asn Phe Asp Arg Gln Thr Ser Gln Arg Phe Glu Glu Tyr Glu
 65 70 75 80
 Gly Arg Met Lys Asp Lys Arg Arg Lys Cys Lys Glu Gln Cys Asp Lys
 85 90 95
 Asp Ile Gln Glu Ile Ile Leu Lys Asp Lys Met Glu Lys Ser Leu Ala
 100 105 110
 Glu Lys Val Glu Ile Gly Cys Leu Arg Cys Gly Cys Gly Leu Gly Gly
 115 120 125
 Val Ala Ala Ser Val Gly Ile Phe Gly Thr Val Ala Val Lys Glu Leu
 130 135 140
 Ala Lys Thr Ala Thr Ala Ala Ala Val Ala Ala Ala Gln Glu Ala Val
 145 150 155 160
 Lys Asp Ala Ala Met Ala Ala Thr Ile Lys Ala Val Gly Ala Ala Ala
 165 170 175
 Gly Lys Glu Phe Val Ile Ala Gly Leu Lys Gln Met Gly Val Ser Thr
 180 185 190
 Leu Asp Gly Lys Glu Leu Gly Thr Tyr Ile Thr Ala Thr Asn Tyr Thr
 195 200 205
 Asn Val Lys Asn Ile Ala His Ala Ile Asn Thr Gln Tyr Glu Pro Ser
 210 215 220
 Ser Cys Leu Ile Thr Val Pro Val Asp Ser Lys Pro Ile Cys Thr Trp
 225 230 235 240
 Val Arg Ala Lys Glu Gly Ala Ala Arg Val Ile Gln Gly Lys Gln Phe
 245 250 255
 Ser Thr Gln Glu Thr Ile Lys Val Ala Val Thr Ser Ile Val Ser Asp
 260 265 270
 Ala Glu Asn Val Ala Ala Ala Ala Glu Gln Gln Ala Thr Lys Asp Ala
 275 280 285
 Ile Lys Ala Ser Thr Leu Ala Val Asp Ser Lys Tyr Ala Ile Cys Gln
 290 295 300

Asn Ala Ile Ile Ala Ser Val Val Ala Leu Leu Ile Ile Val Leu Ile
 305 310 315 320
 Met Ile Ile Ile Tyr Leu Val Leu Arg Tyr Arg Arg Lys Lys Lys Met
 325 330 335
 Lys Lys Lys Ala Glu Tyr Thr Lys Leu Leu Asn Gln
 340 345

<210> 203
 <211> 304
 <212> PRT
 <213> Plasmodium falciparum

<400> 203
 Met Asn Met Tyr Tyr Val Lys Met Leu Leu Phe Ala Phe Leu Ile Asn
 1 5 10 15
 Thr Leu Val Leu Pro His Tyr Glu Asn Tyr Leu Asn Asn His Tyr Asn
 20 25 30
 Val Cys Leu Ile Gln Asn Lys Thr Lys Arg Thr Thr Ile Asn Ser Arg
 35 40 45
 Leu Leu Ala Gln Thr Lys Asn His Asn Pro His Tyr His Asn Asp Pro
 50 55 60
 Glu Leu Lys Glu Ile Ile Asp Lys Met Asn Glu Glu Ala Ile Lys Lys
 65 70 75 80
 Tyr Gln Lys Ser His Asp Pro Tyr Glu Gln Leu Lys Glu Val Val Glu
 85 90 95
 Lys Asn Gly Thr Ile Tyr Thr Gly Gly Asn Gly Ala Glu Pro Met Ser
 100 105 110
 Thr Thr Glu Lys Asp Leu Leu Glu Thr Tyr Lys Glu Val Phe Asp Asp
 115 120 125
 Glu Ser Asp Met Leu Lys Ser Gly Met Ser Gln Asn Val Asp Glu Lys
 130 135 140
 Ser Ser Thr Cys Glu Cys Thr Asp Ile Asn Gly Ala Lys Leu Thr Lys
 145 150 155 160
 Thr Lys Gly Lys Asp Lys Tyr Leu Lys His Leu Lys Gly Arg Cys Thr
 165 170 175
 Arg Gly Ile Cys Val Cys Ser Val Ser Ser Val Phe Leu Thr Leu Ile
 180 185 190
 Gly Leu Ile Thr Ala Lys Asn Ala Ala Val Ala Ala Val Thr Ser Ser
 195 200 205
 Phe Asn Glu Ala Ser Lys Ile Cys Ala Ser Ser Ile Ser Val Leu His
 210 215 220
 Met Phe Thr His Glu Ser Val Thr Leu Ser Met Pro Ser Val Thr Ala
 225 230 235 240
 Ala Gly Gly Val Glu Cys Phe Ser Asp Leu Ala Gly Thr Ile Ser Ser
 245 250 255
 Ala Ala Met Gly Val Phe Glu Pro Cys Gly Ile Ala Ala Leu Val Leu
 260 265 270
 Leu Ile Leu Ala Val Val Leu Ile Ile Leu Tyr Ile Trp Leu Tyr Arg
 275 280 285

Arg Arg Lys Asn Ser Tyr Lys His Glu Cys Lys Lys His Leu Cys Lys
 290 295 300

<210> 204
 <211> 136
 <212> PRT
 <213> Plasmodium falciparum

<400> 204
 Ile Asn Thr Val Leu Phe Lys Asn Met Lys Arg Lys Lys Lys Lys Lys
 1 5 10 15
 Asn Ile His Val Tyr Thr Tyr Ile Leu His Leu Tyr Ile Pro Ile Tyr
 20 25 30
 Pro Tyr Met His Lys Pro Thr Cys Ile His Thr Tyr Ile Tyr Thr Asn
 35 40 45
 Thr Tyr Ile Leu Ile Phe Ile Tyr Arg Lys Lys Pro Asn Ile Thr Ser
 50 55 60
 Gly Arg Thr Asn Leu Phe Arg Val Ile Asp Ile Thr Gln Asn Ala Tyr
 65 70 75 80
 Glu Ile Phe Thr Thr Lys Ser Pro Asn Arg Tyr Val Pro Tyr Glu Ser
 85 90 95
 Gly Arg Tyr Lys Cys Lys Thr Tyr Ile Tyr Met Glu Gly Glu Glu Thr
 100 105 110
 Asp Asp Tyr Ser Tyr Val Leu Thr Tyr Leu Pro Leu Ile Leu Leu Leu
 115 120 125
 His Gln Lys Val Ser Met Lys Arg
 130 135

<210> 205
 <211> 129
 <212> PRT
 <213> Plasmodium falciparum

<400> 205
 Asp Leu Leu His Lys Trp Leu Asp Arg His Arg Asp Met Cys Glu Gln
 1 5 10 15
 Trp Asn Asn Lys Glu Asp Ile Leu Asn Lys Leu Asn Glu Glu Trp Thr
 20 25 30
 Ile Glu His Asn Glu Asp Leu Leu Asp Ile Pro Ser Ser Ser His Asp
 35 40 45
 Asp Ile Leu Lys Ile Lys Asp Glu Thr Tyr Asn Ile Ile Ser Thr Asn
 50 55 60
 Asn Leu Tyr Ser Tyr Glu Asn Asn Asp Ile Thr Pro His Gln Leu Gly
 65 70 75 80
 Leu Pro Asn Ile Ile Pro Ser Gly Ile Ile Lys His Gln Asn Asn Gly
 85 90 95
 Leu Arg Thr Asn Ile Ser Met Asp Ile Pro Phe Asp Glu Gln Asn Asn
 100 105 110
 Asn Leu Glu Asn Ser Asn Ile Thr Tyr Glu Asp Asp Glu Val Gln Asn
 115 120 125

Ser

<210> 206
 <211> 330
 <212> PRT
 <213> Plasmodium falciparum

<400> 206

Met	Lys	Asp	His	Tyr	Ile	Asn	Ile	Leu	Leu	Phe	Ala	Leu	Pro	Leu	Asn
1				5				10						15	
Ile	Leu	Val	Tyr	Asn	Gln	Arg	Asn	Tyr	Tyr	Ile	Thr	Arg	Thr	Pro	Lys
			20					25					30		
Ala	Thr	Thr	Arg	Thr	Leu	Cys	Glu	Cys	Glu	Leu	Tyr	Ala	Pro	Ala	Thr
			35				40					45			
Tyr	Asp	Asp	Asp	Pro	Gln	Met	Lys	Glu	Val	Met	Asp	Asn	Phe	Asn	Arg
	50					55					60				
Gln	Thr	Gln	Gln	Arg	Phe	His	Glu	Tyr	Asp	Glu	Arg	Met	Lys	Thr	Thr
	65				70					75					80
Arg	Gln	Lys	Cys	Lys	Asp	Gln	Phe	Asp	Lys	Glu	Ile	Gln	Lys	Ile	Ile
				85					90					95	
Leu	Lys	Asp	Lys	Leu	Glu	Lys	Glu	Leu	Met	Asp	Lys	Phe	Ala	Thr	Leu
			100					105					110		
Gln	Thr	Asp	Ile	Gln	Asn	Asp	Ala	Ile	Pro	Thr	Cys	Ile	Cys	Glu	Lys
		115					120					125			
Ser	Leu	Ala	Asp	Lys	Val	Glu	Lys	Thr	Cys	Leu	Arg	Cys	Gly	Ser	Val
	130					135					140				
Phe	Gly	Gly	Gly	Ile	Thr	Pro	Gly	Trp	Gly	Leu	Ile	Ser	Gly	Leu	Gly
	145				150					155					160
Tyr	Val	Gly	Trp	Thr	Asn	Tyr	Ile	Thr	Glu	Ile	Ala	Ile	Gln	Lys	Gly
				165					170					175	
Ile	Glu	Ala	Gly	Val	Lys	Ala	Gly	Ile	Gln	Glu	Leu	Lys	Gly	Phe	Ala
			180					185					190		
Gly	Leu	Ser	Arg	Leu	Ile	Asn	Phe	Ser	Glu	Ile	Lys	Asn	Leu	Ile	Asn
		195					200					205			
His	Thr	Asn	Tyr	Phe	Lys	Glu	Met	Thr	Tyr	Val	Ser	Phe	Leu	Gln	Asp
	210					215					220				
Ala	Asn	Lys	Thr	His	Cys	Ser	Ala	Arg	Pro	Thr	Ser	Lys	Glu	Ile	Phe
	225				230					235					240
Cys	Asn	Phe	Val	Ser	His	Asn	Gly	Glu	Ser	Ala	Leu	Ser	Lys	Arg	Ala
				245					250					255	
Ala	Gly	Ile	Ala	Asp	Tyr	Ala	Ala	Asp	Met	Ala	Lys	Ile	Thr	Glu	Glu
			260					265					270		
Gly	Val	Leu	Glu	Glu	Gly	Ala	Ser	Ala	Thr	Ser	Ser	Leu	Thr	Thr	Ala
		275					280					285			
Ile	Ile	Ala	Ser	Ile	Ile	Ala	Ile	Val	Val	Ile	Ile	Leu	Ile	Met	Ile
	290					295					300				
Ile	Ile	Tyr	Leu	Val	Leu	Arg	Tyr	Leu	Arg	Lys	Lys	Lys	Met	Lys	Lys
	305				310					315					320

Lys Leu Glu Tyr Ile Lys Leu Leu Lys Glu
325 330

<210> 207

<211> 345

<212> PRT

<213> Plasmodium falciparum

<400> 207

Met Lys Leu His Phe Pro Lys Ile Leu Leu Phe Phe Phe Pro Ser Asn
1 5 10 15

Ile Leu Leu Thr Ser Tyr His Val His Ser Lys Asn Lys Pro Tyr Ile
20 25 30

Thr Pro Arg His Thr Pro Thr Ile Thr Ser Arg Val Leu Arg Glu Cys
35 40 45

Asp Ile His Lys Ser Ile Tyr Asp Asn Asp Glu Asp Met Lys Ser Val
50 55 60

Lys Glu Asn Phe Asp Arg Gln Ile Ser Gln Arg Phe Glu Glu Tyr Glu
65 70 75 80

Glu Arg Met Lys Gly Lys Arg Gln Lys Arg Lys Glu Glu Arg Asp Lys
85 90 95

Asn Ile Gln Glu Ile Ile Glu Lys Asp Arg Met Asp Lys Ser Leu Ala
100 105 110

Glu Lys Val Glu Lys Cys Cys Leu Ile Cys Gly Cys Gly Leu Gly Gly
115 120 125

Val Ala Ala Ser Val Gly Ile Phe Gly Gly Ile Ala Ile Ser Glu Leu
130 135 140

Lys Lys Ala Ala Met Ile Ala Ala Ile Ala Ser Ala Gln Lys Thr Gly
145 150 155 160

Val Leu Ala Gly Glu Ala Ala Arg Ile Pro Ala Gly Ile Lys Ala Val
165 170 175

Ile Ala Gly Leu Lys Arg Met Gly Ile Ser Thr Leu Gly Gly Lys Asp
180 185 190

Leu Gly Ser Tyr Phe Ala Thr Thr Asp Tyr Thr Asn Phe Lys Thr Ile
195 200 205

Ala Arg Val Ile Asn Ser Glu Tyr Gln Thr Asp Ser Cys Leu Ile Gly
210 215 220

Gly Pro Ala Thr Asp Lys Ser Lys Thr Ile Cys Asn Trp Val Arg Ala
225 230 235 240

Asn Phe Val Ala Pro Gln Asp Ser Pro Gly Lys Gly Gly Ser Val Tyr
245 250 255

Lys Ser Ile Glu Thr Ala Val Lys Ser Ile Val Thr Asp Ala Glu Thr
260 265 270

Val Ala Gln Arg Ala Val Glu Asn Ala Thr Glu Glu Val Ile Lys Asn
275 280 285

Ser Thr Ala Ala Ala Glu Ser Thr Tyr Ala Gly Cys Gln Thr Ala Ile
290 295 300

Ile Ala Ser Val Val Ala Ile Ile Ile Ile Ala Leu Val Met Ile Ile
305 310 315 320

Ile Tyr Leu Val Leu Arg Tyr Arg Arg Lys Lys Lys Met Lys Lys Lys
 325 330 335
 Ala Glu Tyr Thr Lys Leu Leu Asn Gln
 340 345
 <210> 208
 <211> 431
 <212> PRT
 <213> Plasmodium falciparum
 <400> 208
 Met Met Ser Ile Ser Ala Phe Pro Leu Ser Val Gly Ile Ala Phe Ala
 1 5 10 15
 Ala Leu Ser Tyr Phe Leu Leu Lys Lys Lys Ser Lys Phe Ser Val Asp
 20 25 30
 Leu Leu Arg Val Leu Asn Ile Pro Lys Gly Asp Tyr Glu Met Pro Thr
 35 40 45
 Leu Lys Ser Lys Asn Arg Tyr Ile Pro Tyr Arg Ser Gly Gln Tyr Lys
 50 55 60
 Gly Lys Thr Tyr Leu Tyr Val Glu Gly Asp Thr Asp Glu Glu Lys Tyr
 65 70 75 80
 Met Phe Met Ser Asp Thr Thr Asp Ile Thr Ser Ser Glu Ser Glu Tyr
 85 90 95
 Glu Glu Met Asp Ile Asn Asp Ile Tyr Val Pro Gly Ser Pro Lys Tyr
 100 105 110
 Lys Thr Leu Ile Glu Val Val Leu Glu Pro Ser Lys Ser Asn Gly Asn
 115 120 125
 Thr Leu Gly Asp Met Val Gly Thr Thr Ile Phe Thr Asp Glu Glu Trp
 130 135 140
 Asn Gln Leu Lys Asp Asp Phe Ile Ser Gln Tyr Leu Pro Asn Thr Glu
 145 150 155 160
 Pro Asn Asn Asn Tyr Arg Ser Gly Asn Ser Pro Thr Asn Thr Asn Asn
 165 170 175
 Thr Thr Thr Ser His Asp Asn Met Gly Glu Lys Pro Phe Ile Met Ser
 180 185 190
 Ile His Asp Arg Asn Leu Tyr Thr Gly Glu Glu Ile Ser Tyr Asn Ile
 195 200 205
 Asn Met Ser Thr Asn Thr Asn Asn Asp Ile Pro Lys Tyr Val Ser Asn
 210 215 220
 Asn Val Tyr Ser Gly Ile Asp Leu Ile Asn Asp Thr Leu Ser Gly Asn
 225 230 235 240
 Lys His Ile Asp Ile Tyr Asp Glu Val Leu Lys Arg Lys Glu Asn Glu
 245 250 255
 Leu Phe Gly Thr Asn His Val Lys Gln Thr Ser Ile His Ser Val Ala
 260 265 270
 Lys Asn Thr Tyr Ser Asp Asp Ala Ile Thr Asn Lys Ile Asn Leu Phe
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 His Lys Trp Leu Asp Arg His Arg Asp Met Cys Glu Lys Trp Glu Asn
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His His Glu Arg Leu Ala Lys Leu Lys Glu Lys Trp Glu Asn Asp Asn
 305 310 315 320
 Asp Gly Gly Asn Val Pro Ser Asp Asn His Val Leu Asn Thr Asp Val
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 Ser Ile Glu Ile Asp Met Asp Asn Pro Lys Pro Ile Asn Gln Phe Ser
 340 345 350
 Asn Met Asp Ile Asn Val Asp Thr Pro Thr Met Asp Asn Met Glu Asp
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 Ser Val Tyr Asp Ile Pro Met Asp His Asn Lys Val Asp Val Asp Val
 385 390 395 400
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 Pro Thr Asn Tyr Asp Ser Asp Pro Glu Met Lys Arg Val Met Gln Gln
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 Phe Val Asp Arg Thr Thr Gln Arg Phe His Glu Tyr Asp Asn Arg Met
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 85 90 95
 Lys Ile Ile Leu Lys Asp Lys Leu Glu Lys Glu Leu Met Asp Lys Phe
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 Ala Thr Leu Gln Thr Asp Ile Gln Asn Asp Ala Ile Pro Thr Cys Val
 115 120 125
 Cys Glu Lys Ser Leu Ala Asp Lys Val Glu Lys Val Cys Phe Arg Cys
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 Gly Gly Leu Leu Gly Gly Gly Ile Ala Pro Gly Trp Gly Leu Val Ser
 145 150 155 160
 Gly Leu Gly Tyr Val Gly Trp Thr Asn Tyr Val Thr Gln Thr Ala Leu
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 Gln Lys Gly Ile Glu Ala Val Ile Ser Tyr Leu Glu Gln Ile Pro Gly
 180 185 190
 Ile Lys Gly Leu Pro Gly Phe Asn Leu Ala Asn Ile Val Asn Pro Asn
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Asn Tyr Ser Ser Gly Gly Leu Leu Thr Thr Ala Ile Asp Ala Ala Ala
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 Arg Pro Ile Cys Ser Val Asn His Ser Lys Thr Pro Ala Phe Cys Ser
 225 230 235 240
 Tyr Ala Thr Gln Asn Gly Gly Ser Ile Ile Ala Lys Val Ser Val Asp
 245 250 255
 Ala Glu Asn Ala Ala Asn Ala Gly Ile Asp Ala Ala Ser Ala Glu Ala
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 Ala Asn Leu Ala Pro Lys Thr Leu Thr Leu Thr Asn Thr Ile Ile Val
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 Tyr Ile Lys Leu Leu Lys Glu
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 His Leu Cys Ser His Asn Leu Glu Ser Ile Asp Thr Thr Ser Met Thr
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Phe	Ser	Gly	Leu	Met	Asp	Ser	Ala	Asp	Val	Val	Leu	Glu	Leu	Ala	Leu	
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Glu	Thr	Glu	Thr	Val	Glu	Gln	Pro	Val	Lys	Asp	Thr	Asp	Arg	Glu	Gly	
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Asp	Ala	Cys	Lys	Leu	Lys	Tyr	Gly	Pro	Gly	Gly	Lys	Glu	Arg	Phe	Pro	
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Asp Tyr Arg Asp Ile Leu Val	Arg Gly Val Ala Asp Asp Lys Asn Gly		
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Pro Ser Phe Cys Pro Pro Val Glu Asp Lys Lys Lys Glu Glu Gly
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Ser Ile Ala Phe Leu Phe Leu Lys Val Ile Tyr Ile Cys Val Val Tyr
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Met Tyr Ile Tyr Met Cys Phe Cys Ile Tyr Met Tyr Lys Lys Thr Lys
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His Pro Val Asp Leu Phe Ser Val Ile Asn Ile Pro Lys Ser Asp Tyr
 1795 1800 1805

Asp Ile Pro Thr Lys Leu Ser Pro Asn Arg Tyr Ile Pro Tyr Thr Ser
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Gly Lys Tyr Arg Gly Lys Arg Tyr Ile Tyr Leu Glu Gly Asp Ser Gly
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2065

2070

2075

2080

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<213> Plasmodium falciparum

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atacctagtg	gtaaaactaag	tgatacacct	agtgataaca	acatacctag	tagtaacaaa	4860
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gctatggatg	tacctagtaa	agtacaaatt	gaaatggata	taaatactaa	attggtgaaa	5100
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<210> 212

<211> 1005

<212> DNA

<213> Plasmodium falciparum

<400> 212

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tcacagaag	tatataatca	aaggaacat	tacatcacac	gtacaccaa	agcaaccact	120
aggacattat	gcgaatgtga	attgtatgca	ccatcaaact	atgataatga	cccagaaatg	180
caaaaagtaa	tggaataa	caatcgacaa	acgtcacagc	gttttgaaga	atacaatgaa	240
cgtgtgatca	aaaacagaca	aaaatgtaag	gaacaatgcg	ataaagaaat	acaaaaaatt	300
atattaaaag	ataaattaga	aaaagaatta	atgaacaaat	ttgccacatt	acaaactgat	360
atataaagcg	atgctattcc	cacatgtggt	tgcaaaaat	cagtcgcaga	taaagttgaa	420
aaaacctggt	taaaatgtgg	agggtgtgtg	ggaagtggta	ttgcgccaag	cgttggtttg	480
ttaggtacgg	ttgccataga	tcagtggaca	aatgctgcct	tgcttgatgc	agctcaaaag	540
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gctttgattg	aatctattta	tgacgcaaaa	caaaaagtgt	gtgataatgt	tggaatcca	720
gcaccaactt	gccatagagt	aggacaagac	ggcacctcaa	tttggtttcg	tccagaagta	780

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ttaattatag	ttttggttat	gttaattatt	tatttaattt	tacgttatcg	acgaaaaaag	960
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<210> 213
 <211> 1323
 <212> DNA
 <213> Plasmodium falciparum

<400> 213	atgaaacgca	aaaaaaaaaa	aaaaaatata	catgtatata	catatatatt	gcattttatat	60
	atacctatat	atccatatat	gcacaaacct	acttgtatac	ctacttacat	atataccaat	120
	acatatatat	taatatttat	atataggaaa	aaacccaata	ttacgtctgg	acgtacaaat	180
	ctttttcgtg	tcattgatat	acctcaaaac	gattatgaca	tgtctacaac	gaaatcatca	240
	aataggatat	tcccgtatga	aagtcacaaa	tataaaggaa	aaacatatat	ttacatggaa	300
	ggagaagaaa	cggacgatta	cagttatatt	cgtgacatat	cttccctctga	tattacatct	360
	tcgtcagaga	gcgaatatga	agaattggat	atcaatgata	tatatgtacc	aagtccttca	420
	aaatataaaa	cgttgattga	attagtacta	gaaccttcaa	aaagggatag	atttaataca	480
	ccaagtgggtg	acacattcac	caataaattt	agagatgatg	aatggaacca	actgaaacag	540
	gatttttattg	aacaatattt	acaaaacata	caaaaggatt	ttattttaca	tgatagtatg	600
	gatgaaaaac	cttttattac	tcaaatccag	gatagatttc	ttgatagtag	tcatagaaga	660
	gttatttata	atattgattg	gaatgttcct	gaaaaatatta	atagaattaa	taatcatatg	720
	catgatacaa	aatactgctc	aaataattta	tatactggta	cagatttaaat	taattgattca	780
	ttaaatggta	accaatatat	tgatatatat	gatgagatgc	tgaaacgaaa	agaaaacgaa	840
	ttatttggaa	catatcatat	aaaatatata	acctttaaca	gtgtttctaa	acaaacacct	900
	agtgaccgga	taattaacca	actatattta	tatcataaat	ggatagacaa	gcataagatat	960
	atttgcgaa	agtggaaaaac	caaagaggat	atgttatata	aatcgaatga	agtgtggaat	1020
	atggaacgta	aggaatatct	attggatata	caaccatcaa	ctctggatga	tattcataaa	1080
	attaatgatg	aaacatatata	tatttagtag	acaaataata	tatatgatca	tccctcacag	1140
	gaaaccccc	tccaactact	tggatcaaca	aatattatac	ccagttatat	taccacggaa	1200
	caaaataatg	gattgcgac	aaatatatct	atgtatacat	atattgatga	aacaaataat	1260
	aataatgtgg	tagccactag	tataataggt	gacgatcaga	tggaataatc	gtacaattgt	1320
	tga						1323

<210> 214
 <211> 915
 <212> DNA
 <213> Plasmodium falciparum

<400> 214	atgaaaatgt	attatcttaa	aatgttattg	tttacctttt	taataaatat	attagtagca	60
	cgacattatg	aaaattttgt	aaataacat	tataatgtaa	gtctcattca	aaacaagacc	120
	aaaagagtaa	ctataaaatc	aagactttta	gcacaaacct	aaatccacaa	tccgcattat	180
	cataatgatc	cagaactcaa	agagataatt	gataaaatga	acgaggaagc	aatcaaaaaa	240
	taccaacaaa	ctcatgatcc	atataaacaa	ttgaaagaag	tagtagaaaa	gaatggatca	300
	caaaatagaa	gtggacatgt	tgacgaacct	atgtcgacgc	tagaaaaaga	attattggaa	360
	acatatgtag	aaacatttgg	tgaagaaagt	aatattatgt	taaaatcagg	taggtacca	420
	aatggtgatg	acgtatcaga	tgattcatct	tcattgtgact	gtactgatat	taataatgag	480
	aaactagaaa	aaacaaaagg	aagagataag	tatttaaaac	atttgaaagg	gagatgtacc	540
	cgtgggtatat	atttttgttc	agctggtagt	gcactcctaa	cattgatagc	tctgatagct	600
	gcaaaaaaag	ctgccttaag	tgctgttgct	tcatatgcag	gatttaaaaa	ttgtatgtcc	660
	tctattgcaa	catttaaact	acttgatagt	tcaactttac	tttcatcttt	tctatcaatg	720
	aaagcatgtg	ttgttggtgc	tactgatatg	gcaggaacta	ttgcaacacc	tgctatggcc	780
	gcatttttacc	cttatgggtat	tgctgccttg	gttctactta	tattagctgt	tgtacttata	840
	atcttatata	tatggttgta	tagaagaagg	aaacattcgt	ggaaacatga	atgcaagaaa	900
	catttatgta	agtaa					915

<210> 215
 <211> 1113
 <212> DNA
 <213> Plasmodium falciparum

<400> 215	atgaaagtcc	attatatttaa	tatattattg	tttgctcttc	cattaaatat	attggaacat	60
	aataaaaaatg	aaccacacac	cacaccacat	catccaccaa	ataccaggct	attatgcgaa	120
	tgtgaattat	attcacctgc	caactatgat	agtgatcccg	aatgaaaag	ggtaaatgcaa	180

caattttgtgg	atcggtacaac	acaacgattt	cacgaatatg	atgaaaggat	gaaaacttaca	240
cgccaaaaat	gtaaggataa	atgtgacaaa	gaaattcaaa	atatttatatt	aaaagataaaa	300
ttagaaaaac	aaatggaaca	acaattaacc	acattagaaa	caaagataga	taccaatgat	360
ataccacat	gtgtttgcca	aaagtcgtta	gcagataaaa	cagaaaaatt	ttgtctgaac	420
tgtggggtgc	aactaggagg	tgggtgtgtg	caagcttcgg	gtttattagg	aggaattggg	480
caacttgggc	tagatgcatg	gaaagcagcc	gcgttggtta	ctgctaagga	acttgccgaa	540
aaagccggtg	cagctaaggg	tttggctgaa	ggtaatgccc	atgggtatgaa	aatagttatt	600
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aagtttaggt	cacttaaacc	agatgggtatt	agaccagggtc	ttccagacaa	ggatgctgta	840
acaaaagtgt	taaacggact	tgttgaacaa	gctgataaag	ctgctgctca	cgttaccaag	900
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agatttgaaa	gttccattac	ttctataaat	gcttcgatta	ttgcaattat	agtaatatgt	1020
ttaattatgg	taattattta	tttaatttta	cgttatagac	gaaaaaaaaa	aatgaagaaa	1080
aaactccaat	atatcaaatt	attagaagaa	tag			1113

<210> 216

<211> 1128

<212> DNA

<213> Plasmodium falciparum

<400> 216

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tcatcatatg	cacataataa	aaataaacia	tacatctcag	cacgtacacc	aactattaca	120
tcacgaatgt	taagtgaatg	tgacataaat	acgtcaattt	atgatgatga	tactgaaatg	180
aaattttgtga	aggaaaattt	cgatagacaa	acgtcgcaac	gttttgaaga	atacaatgaa	240
cgcttgcctg	aaaacaaaaca	aaaatgtaaa	gaaaaatgcg	ataaagaaat	tcaaaaaatt	300
attttaaaag	acaaattaga	aaaagaatta	atggacaaat	ttgctacatt	acaaacagat	360
atacaaaaatg	atgctattcc	cacatgtgtt	tgcgaaaagt	cgtagcaga	taaaacagaa	420
aaattttgtc	tgaactgtgg	gggtgcaacta	ggaggtgggtg	tggtgcaagc	ttccgggttta	480
ttaggaggaa	ttgggtgcagt	tgctgtaaat	gcctggaaaag	atgcggcact	tgaggccgcc	540
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aaggccgtag	ttattaaatc	attaaaaatat	tttcgtgtag	atgttttctt	tcctaaaaat	660
tttaattcca	ttggtaatgc	gataccttat	tatgatgcca	aaacgattgg	tgctgctatt	720
gctgaaaaac	atgctcagaa	ctgtgcgctg	gtgtccacta	atgagggtgc	tatgtgctat	780
ccattttgaag	tttaatttagg	tatacgtgag	gcaataaactt	ttacacaaac	tggtcctcca	840
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cgtttgttag	aagctggatt	taatagttcc	attagttcta	taaatgcctc	tattattgca	1020
atagtcgtaa	taattttaat	tatggtaatc	atatatttaa	ttttacgtta	tagaagaaaa	1080
aaaagaatga	agaaaaaaca	ccaatatata	aaactattag	aagaatag		1128

<210> 217

<211> 993

<212> DNA

<213> Plasmodium falciparum

<400> 217

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aatcaaagga	gctattacat	tacaccacgt	catacagaaa	ccaacagatc	tttatgtgaa	120
tgtgaattat	attcacctac	gaactatgat	agtgatccag	aaatgaaaag	ggatgatgcaa	180
caattttgagg	atcggtacatc	acaaagattt	cacgaatatg	aagaacgtat	gcaaagtaaa	240
cgaatgcaat	gtaaagaaca	gtgtgataaa	gaaatacaaa	aaatttatatt	aaaagataaaa	300
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attccaacat	gtgtttgcca	aaaatcctta	gcagataaag	tggaaaaagg	ttgtttacga	420
tgtgggtatg	gtctaggaac	tgttgcacca	acggttggat	taattgggtgc	aatagctgta	480
aatgagtggg	caaaagctgc	tactgcagcg	gcaactcaaa	aggggtattga	ggcagggtatt	540
aatgtagtaa	tagatacatt	aaaaagatta	ttcaacatag	aggttagtaac	agatcctaaa	600
tggaaaaacac	tcattactgc	acaaaattat	actgataaga	ttcttgttgg	tgatgtttatt	660
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ttcacagttta	aagccaatac	ccttcctcaa	gcaataaatg	gacatgttac	aaaagctatt	780
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tcagctgggtg	cttattctac	tggataataa	gtctcagttg	ttgcaatagt	ggatcatagtt	900
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aaaatgcaat	ttatgaaatt	attaacgaa	tag			993

<210> 218
 <211> 747
 <212> DNA
 <213> Plasmodium falciparum

<400> 218
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 acatatatat taatatattat atataggaaa aaacccaata ttacgtctgg acgtacaaat 180
 ctttttcgtg tcattgatat acctcaaaat gattatgaca tacctacaac aaaatcatca 240
 aatagggtatg tcccatatga aagtgaacct tatgttggca aaacatatat ttacgtggaa 300
 ggagaagaaa cggacgatta cagtttatatt cgtgatatat attcctctga tattacttct 360
 tcatcagaaa gtgagtatga agagatagat ttaaagtata tatatgtatc gggtagtcca 420
 aaatataaaa tgtttatcga agtagtacta gaaccattaa atagggatagc atttaattta 480
 tcaagtggta acacatctac caataaactt acagataatg aatggaatca atggaaacag 540
 gattttattg aacaatattt aactcatata ggatctgctg taccattata catgagttac 600
 aaactgataa tatgtatatg tatacccaaa ctaatatattt acatgttatt atggatgaaa 660
 aaccttttat tacatcaata taagatagat ttcttggtag tggatcatcaa taagttactt 720
 ataattattga ttggaatatt cgaataa 747

<210> 219
 <211> 519
 <212> DNA
 <213> Plasmodium falciparum

<400> 219
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 gatgtagtag aaaaaaatgg aagaaaaatat acaagtggaa atgggtgcaga acccatgtca 120
 acgatagaaa aagatttatt ggaaacatat gaagaaatgt ttgggtgacga aagtaatacg 180
 ttgaagtcag gcatgagtc aaatgttgat gaaaaatctt cagcatgtga atgtgctgat 240
 attaataata taaaactagg aaaaacaaaa ggaagagata agtatttaaa aactttaaaa 300
 gggagatgta cgcgtgggtat atatatttct tcacttacta ctgtaatctt aacaacgac 360
 gctttgtatg ctgcaagagc tgctgccatt gctacctta gagaacctta tagtgctgt 420
 gcagcctttg tttctatatt taacatgctt agtagggaaa ctgtgatcga gctattcaaa 480
 caggcactgg aatatgtgca tctggtgctg ctgatttag 519

<210> 220
 <211> 939
 <212> DNA
 <213> Plasmodium falciparum

<400> 220
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 aataataaaa ataaaccatc catcacacaa cgtcatacac caagatatac atcacgagta 120
 ttaagcgaat gtgacatccg atcgtaatt tatgataatg atgcggagat gaaatcagtg 180
 aaggaaactt tcgatcgaca aacatcacaa cgttttgaag aatacgaaga acgtatgaaa 240
 ggtaaacgcc aaaaacgtaa agaacaacgt gacaaaaata tacaagaaat tattgaaaaa 300
 gatagaatgg acaaatcatt agcagaaaaa gtagaaaaag tttgtcttag gtgtgggttt 360
 gggtaggag gtgttcgagc aggtgttggg atatttgggtg caattgctgt aaatgaatgg 420
 acaaaagctg ctttggttgc tgcagctcaa aaggggtattg atgcaggtat caaatcagcc 480
 cttaaaggat tagaaaaaat atatgaacta agtgattttt cttattttaa atggctctgca 540
 atggttactc caacaactta tgatcaacct atggatctta ttgctattgt aactaaagca 600
 tataatatgt gtgatgacgt tgaggctgct aagggtatctt tattttgtca ggccatggaa 660
 ggtatagcta atgaacctga tggatgtcct gttaaaacct tttctcaaat ggctgtagac 720
 gctgcagaag cagctggtaa agtttctaaa actaccgaag aagctggaat agccttagca 780
 aataatacaa gttacaattc gtacattgca attgcttact ccgtgactgc tatactgatt 840
 atagttttta ttatgttaat tattttattt attttacgtt atcgtagaaa aaaaaaatg 900
 aataaaaaac tacaatacac aaaattatta aatcaataa 939

<210> 221
 <211> 1071
 <212> DNA
 <213> Plasmodium falciparum

<400> 221
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 ggtcaagggc actatagtag cactaaacat cctatatcaa gcacaaaatc ctcaaaatc 120

catagatcat	tatgcgaatg	cgaaatatat	acgtccattt	atgataacga	tccggaaatg	180
aaaaaagtaa	tgcaagattt	cgatcaacaa	acctcacaa	gattacgca	atatgacgaa	240
cgtttgataa	aaaacagaca	aaaatgtaaa	gatcaatgtg	ataaagatat	tcagaaaatt	300
attttaaaag	ataaaattga	aaaagaatta	acaaaacaat	tggaggcatt	agaagttgat	360
ataactacgg	aggatatacc	cgcttggtgt	tgcaaaaagt	ccgtagaaga	caaagtgagg	420
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ggagcttatg	ctgtaaatag	tatggtacaa	gttgctatgg	atgctgctaa	gaaagcggct	540
atagctgaag	gtgctgaagc	cggtattgct	gaaggtatta	aggtagccat	tcaaggagta	600
ccaaaaaaat	tcttattata	cactttaaat	ggtaagaagt	tacaagcagt	tattaatgca	660
aataattttc	agaatccttc	ttttttttat	ggtgaaatca	tggcgggaata	tgtttcatgg	720
aaaaaatctg	atatggttaa	ctcttatggt	cttttttctt	ttattgaaga	aagctgtgaa	780
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gctggtaaag	cagctaccaa	aatgactact	caaactactg	aagctcttac	actgaagaag	900
actgctgagg	caacaagtac	atcagctatt	ttttctaate	ctatagttat	tagctttatt	960
gtactagtaa	ttatagttct	tatactttta	attattttat	taattttacg	atatcgaa	1020
aaaaggaaaa	tgaagaaaaa	actccaatat	ttaaaattat	taaaagaata	a	1071

<210> 222

<211> 873

<212> DNA

<213> Plasmodium falciparum

<400> 222

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atacaaaaaca	acacacaaaag	aacaacgata	aattcacgat	tattagcaca	aacacaaaat	120
aaaaatccac	attatcataa	tgaccagaa	ctaaaagaaa	taattgacaa	attgaacgag	180
gaagcaataa	aaaaatacca	acaaactcat	gatccatatg	aacaattgaa	agatgtagta	240
gaaaaaaatg	gaacaaaaaca	tgtaggtgga	catgtttctg	aacctatgtc	aacgatagaa	300
aaagaattat	tggaaacata	tgaagacggt	tttggtgaca	aaaatcatgt	tatgttaaaa	360
tcgggtaggt	acccaaaatga	tgatgacaaa	tcagatgatt	catcttcatg	tgaatgtact	420
gatgttaata	atacgaaatt	agaaaaaaca	aaaggaaaag	ataagtattt	aaaactacta	480
aaacacagat	gtataggtgg	aatatgttct	tgctccgttg	gtagtgcgtt	ccttacaatt	540
ttaggttggtg	catttgcaaa	atctgtgcc	cttactgcct	ttgcttcttc	agaaagcact	600
aaaacttgta	tatcctctgt	tgcaatatat	aattttattc	agaattcaac	tatgctttca	660
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ttagctggtg	cacttataat	attatatata	tggttggtata	gaaggagaaa	aaattcatgg	840
aaacatgaat	gcaagaaaca	tttatgtaga	taa			873

<210> 223

<211> 471

<212> DNA

<213> Plasmodium falciparum

<400> 223

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aatgcaagac	ataagagatt	actatccgaa	tcagaagacg	aatatatatt	taagacacat	180
tcgggagaaa	attcatcgac	acaaccaata	gataataaat	cacatgaaaa	tattacagaa	240
tatcataaaa	catcatcttc	attcagatta	aatgaggaat	atccacaaaa	tcataattat	300
gaatcagaac	aaataaaaatg	ggaaaatgaa	aaaaataata	aattattggt	acagaaatta	360
cgtaagaaat	cacattacag	aaatattaaa	ataattttta	taacagcttt	atctatgatg	420
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<210> 224

<211> 765

<212> DNA

<213> Plasmodium falciparum

<400> 224

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tgtaaaatta	aatatggaaa	aagtcataca	gaagattctt	tcaatttaat	aaaactgaga	180
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ggaaaggagt	ctgaatgttt	tggggaaaac	atgaatgaag	tatatataaa	acttataact	360
gattttaaac	ctgatttgat	taatgtaaat	gcaacaagta	aaaaggaatt	gctaaatgaa	420

tgggatttta	ttatgaataa	ttttaatgga	aagaatgttg	aaaaaatcgt	tgaaataaag	480
gatgaaacaa	atgatgaaac	agacaatgaa	acaaatgatg	aaacagacaa	tgaaacaaat	540
gatgaaaaaa	gtataaaaaa	gaagaaaaaa	aaaagaaaag	gaaaacctag	gataagatat	600
attgcagaga	tgggttgata	tgggtactata	tgcatagctg	gtgctcctgt	tatattaact	660
ctcattattg	ttggagggtt	catatggggt	gttaaaggta	caaaatatgc	aagaaaatat	720
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<210> 225

<211> 1110

<212> DNA

<213> Plasmodium falciparum

<400> 225

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tatttatgt	tatcaggaaa	tagtgaatat	acaaatgatt	tagatcttga	aataaataag	180
aaacttgtgt	tattgaataa	tgagactaat	agtgaagctta	gaatacatat	tatttggcat	240
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ttttatcttt	taagaaaaaa	atataaaaaca	ccttttaatt	atgcaaaacc	aacgtgtaat	360
caatgtaata	aattttttgc	attatcgaaa	aaatatattg	aaaattcatt	taataaggtt	420
tttaataaat	ggttcaaaaa	taatgtatat	ttagatgtaa	acgaatttag	ggttattgta	480
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ctcattgaag	caattgaaag	ggcagtcgaa	agagatgttg	aaagagaagt	tgagaaaaa	1020
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<210> 226

<211> 2703

<212> DNA

<213> Plasmodium falciparum

<400> 226

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tgttattcag	ttagtaatat	tataatatat	gaaagacaat	taagcgaaaa	agacaactta	180
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aattttattg	ataatataat	tgaaggttta	gaacaatata	tgctatggaa	taattcatg	360
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ggatgtaatc	tatgcaaaaa	acttattgaa	attggagaaa	agtatcttga	attgaaatta	660
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<210> 227

<211> 1065

<212> DNA

<213> Plasmodium falciparum

<400> 227

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acagaaaaca	aattttattc	taattcacct	tcatcaccaa	atggaaatgt	actctttgaa	420
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acgcctctta	ctacaagagt	tattactagt	gaagggaatgc	catatatgga	aaatccaaaa	960
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<210> 228

<211> 7326

<212> DNA

<213> Plasmodium falciparum

<400> 228

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gttaagaatt	ataataaaat	tgacaatgtg	tataatatat	ttgaaataag	acttaaaaga	180
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cagaaaactg	aaaaaaatga	aaaagcaaga	aatgctttta	aggaaaagaa	gttaaaagaa	360
caaaaaaaga	atgacgcgca	gaaagcaaaa	gatttaacaa	aaaaggaaag	ccaagactct	420
tcaagtgaag	aatcactaaa	ggaaaaagta	aatggagaag	cattaaagga	aaaagaaaaat	480
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<210> 229

<211> 1965

<212> DNA

<213> Plasmodium falciparum

<400> 229

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 <213> Plasmodium falciparum

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aattctatat	ataattatat	taataatgaa	tcatcaagtc	gtgaacaatt	tcttatattt	540
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<210> 231
 <211> 768
 <212> DNA
 <213> Plasmodium falciparum

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 <211> 3579
 <212> DNA
 <213> Plasmodium falciparum

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<210> 234
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<211> 1617

<212> DNA

<213> Plasmodium falciparum

<400> 235

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<211> 348

<212> DNA

<213> Plasmodium falciparum

<400> 236

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<210> 237

<211> 237

<212> DNA

<213> Plasmodium falciparum

<400> 237

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ataggagggt	acaataatat	gtattattta	gtttttcttc	atatacatat	tattataacc	180
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<211> 5940

<212> DNA

<213> Plasmodium falciparum

<400> 238

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<211> 7458

<212> DNA

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<210> 240

<211> 1524

<212> DNA

<213> Plasmodium falciparum

<400> 240

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agcaaagaaa	atattaataa	ttccaaaaaa	ataaaaaatg	aattaagtat	aaaagataat	240
atgcacgatt	acatatatga	tgatcgtatc	tacaataatg	ataaagagaa	aaatggtata	300
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tctgaagaga	tgataagaaa	ttattcatct	aatcaatatt	ctataaaatt	tgtaccaaga	1440
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<210> 241

<211> 729

<212> DNA

<213> Plasmodium falciparum

<400> 241

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gacaataatg	ctgagcaata	tttaattata	tcattaaagac	aaaaactgaa	tccagttata	180
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aaagctagaa	tagaaacttt	atcaaataaa	tataataaca	gaatattatt	atgtctagtg	360
gatatggaaa	atattgaaaa	ttcttttagga	gaaataaatc	aattatcgtt	ttcttttaat	420
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gaaaaaatat	atgaactatt	aaaaaaaatc	agatgtatac	atacaacaga	ttgtataaca	600
cttacaacca	aatttaaaaa	ttttaaaaaat	attattcaag	ctaaaaaaga	agatctaata	660
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<210> 242

<211> 72
 <212> DNA
 <213> Plasmodium falciparum

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 ccagcagaac ct 72

<210> 243
 <211> 1908
 <212> DNA
 <213> Plasmodium falciparum

<400> 243
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 aatatgaaag aaatccatga gagaaaaaaa ggaaatgata ataataataa aaagaagaag 180
 aaaaagaaaa aagaaaaataa cacaataacc atacgtaatt attttaattt ggtcgataaa 240
 gaaaaataatt taaaaaataa taataataat gatgatgggt taacaaatgt aatggagcaa 300
 gataaaaaata aagattgttt attatcatta acaattaaaa ataataataa taataagacc 360
 ataattaata tgtttttttt ctttggacat tttaataatta tgattattat atattatgtt 420
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 catacaaatc aaagttatac agccgatagt ataagtgatg atctaaataa agtaggctca 540
 gataataata gaaataaaaa tattattatg aggcatacta atataataa taaagaacat 600
 tatcttcaaa aaaaaataaa tatacaagat gcgaagaag aagataatga aaccataaga 660
 agcgacagca aattaagaga catatatagt gatagtcaaa gtaagatat tatgatgagt 720
 tcaagtccaa acaaagaaga agaaagtatg agtagtgata atcataataa agatattaat 780
 agtagtgata atcaaaataa agatattaat agtagtgatc ataatatgaa tgatagtact 840
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 aatagaaaaa aaaataatat taacattaat aataataata ataatagtaa taatattaat 960
 agtagtagta ataataatag tgggggtatat cattatcttc ctagtcaaaa atataataat 1020
 aaataataata catacaataa taaagatcat attattttatc acaataaatg tattacacat 1080
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 tccaatatca tactacttga aaaaaaatat gcaaaaacgt ttaatgaagt tgataccaat 1860
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<210> 244
 <211> 1299
 <212> DNA
 <213> Plasmodium falciparum

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 tattttatata tgaaatctgt tgaaagagca catttaccta gtgccttatg gagtaggggt 240
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 cagaatataa aacatataaa gaaatgtatg aagagatatg taaggataaa agaaatatta 360
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 gtgatggggg agaataaaga tgaaatgaaa aagaagggga aaaaaggaaa ggacgaaaat 660
 gtaaattatg agacaatgtc tcaggagggg ggaggccagg aggatgatga tgaagatgtg 720
 gatatggatg atgatgatga ggatgtagat atggatgatg aagatgagga tgtagatatg 780
 gatgatgaag atgaggatgt agatatggat gatgaagat aggatgtaga tatggatgat 840
 gaagatgagg atgtagatat ggatgatgaa tagatggatg tagatgaagat 900

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gttgaagaaa	gtacctcaat	aagtaatgat	aaaaagaaga	aaaagaagag	aaagagaaaa	1140
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ctggcaatgg	acgatgatga	aatagaagaa	atgaatcata	attttagaag	aaaaaaaaaa	1260
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<210> 245

<211> 1683

<212> DNA

<213> Plasmodium falciparum

<400> 245

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atacatagaa	taaaaagtgt	gaacaaaaga	tatgttgaaa	aaaatgagta	tattcaacaa	180
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aaaagtagta	atcaaattaa	tgatgattat	gaaacgtttt	taatagtgtga	tggatcgctt	300
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<210> 246

<211> 2394

<212> DNA

<213> Plasmodium falciparum

<400> 246

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aaacataact	cgatcatcaa	aaaaaaccag	ttgataatgt	ctgatgaaga	agaatattta	360
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gaaaaagata	ataaaaacaa	agacaatgat	atagatgcta	ttaatgaatt	tgaaattaca	600
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<213> Plasmodium falciparum

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<213> Plasmodium falciparum

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<212> DNA

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aggaataatt	gtgaggaaaa	aaaaaaaaacg	gatgatttcg	aaataaataa	atatgatgat	1920
ttaggagaaa	gagaatatag	ttataataat	acttatgaag	gtttattaga	tggttaataat	1980
tacaaaaataa	ataaaaaaga	atttttatta	tttcttaatg	aagtacaaaa	acttgtacac	2040
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tttttttaaaa	atgataaaaa	aatgtatatg	aagcaaaacta	attcctgttc	acctttatta	2160
ttaataaatg	aatttaattag	taaaaaaata	ttagacaaag	atacattttac	cataaatggt	2220
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tatgtttatt	catcaaaatc	caaaaaaaata	aaaaaacgcta	tgcatataaac	atcttatgat	2340
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aatatgaaac	aatcggtata	caatgtagaa	atattaaata	ataacgaatt	aaatacaaat	2460
caaatacaac	atattcaaaa	aggtgataat	aataagtggt	atgatgtgcc	tatttttaaaa	2520
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catcaaaagg	gacaacggaa	tgaagaagat	aacacatata	ataaaatggc	cattcgaaat	3420
aattttcttac	attctatatt	taataataat	aaatgtatta	aaacaaatag	aaaatttaca	3480
actaattcgt	taagatcagt	tgatggtaaa	actaaagttc	tgaaaggagt	ttttaagaga	3540
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<210> 251

<211> 1515

<212> DNA

<213> Plasmodium falciparum

<400> 251

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ggatttttta	gtacatcggt	taaatatgta	ttatcagcat	gcatagcatc	atttatattt	120
ggttatcaag	tgagtgtggt	aaatacaata	aagaatttta	tagttgtaga	atttgaatgg	180
tgtaaaggag	aaaaggatcg	attgaattgt	tccaataata	caattcagag	ttcatttttg	240
ttagcatcag	tatttatagg	tgctgtgtta	ggatgtgggt	tttctgggta	tttagtacia	300
tttggaagaa	ggttatcatt	attaataata	tataattttt	tctttttagt	aagtatttta	360
acgtccatta	ctcatcattt	ccataccata	ttatttgctc	gtttgttaag	tggttttggt	420
ataggccttag	ttaccgtaag	tgttcctatg	tatatatccg	agatgactca	taaagataag	480
aagggtgctg	atgggtgtaat	gcatcaatta	tttataacat	ttggtatatt	tgtagctggt	540
atgttaggct	tagcaatggg	tgagggtcct	aaggctgatt	cgactgagcc	attaacttcg	600
ttcgctaaat	tatgggtggag	gcttatgttt	ttatttcctt	ctgtcatatc	attaataggt	660
atattagcct	tagttgtttt	ttttaagaa	gaaaccccat	attttctttt	tgagaaagga	720
agaattgaag	aatccaaaaa	cattttgaaa	aaaatttatg	aaacagataa	tgtagatgaa	780
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tctttattat	cagcattaaa	aatcccatca	tatagatatg	ttataatatt	aggatgtttg	900
ttatctgggt	tacaacaatt	tacagggtata	aatgttttag	tgtccaattc	aaatgaatta	960
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ttactatggg	gatgtgtagg	agtttttagt	gcttattttac	ctacagcaat	tgctaataga	1140
ataaatagaa	attctaattt	tgttaaaaata	ctttccattg	tagcaacgtt	tgttatgata	1200
atttcttttg	ctgtttctta	tggacctgtt	ttatggattt	atttacatga	aattgtttcca	1260
tcagaaataa	aagatagtgc	tgcaagcttg	gcatcattag	ttaattgggt	ttgtgcaatt	1320
attgttgtct	tcccatcaga	cattattatt	aagaaatccc	cttcgattct	tttcatagtt	1380
ttttcagtc	tgcaattttt	aaccttcttc	tttatttttt	tctttatcaa	agaaactaaa	1440
ggaggtgaaa	taggaacaag	tccatacata	actatggagg	agcgacaaaa	gcatatgacc	1500
aagtcggttg	tatga					1515

<210> 252

<211> 1251

<212> DNA

<213> Plasmodium falciparum

<400> 252

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aagaagagaa	atataaaata	tataagtgat	tgtaagagtt	gtaaagaatg	tgtggatgaa	180
ataaaaaatg	gtaattataa	tttattaaaa	gatttcaata	tgaaaatgat	tgggttggtg	240
atagaaggat	ataaaatagg	taaatatggt	attgtgaagta	taatacagat	atggttatgaa	300
gatatatata	tttttgatat	atataaatgt	gataacgtat	atttatttat	aaatttatata	360
aaagatatata	tggaaatgtga	tgatataata	aaagtaacac	atgattgtag	agaagattgt	420
tcgatatttat	ataatcaata	taatatatcat	ttaaaaataa	tattagatac	acaagtagca	480
tataattttat	tattaaaaaa	taataataat	tatacaataa	cttatcaaat	tagttatgat	540
gattttattaa	aaaaatattt	atttataaat	aataatcata	aaatatattt	tcataaaatg	600
atcacactag	ataattatat	ttattttaag	aggcctatta	tgaaagaatt	aatttcatat	660
gctatccaag	atgtaatata	tttaaaacct	ttaatcttat	gtattttaga	ttaattcatt	720
ataaaaacaaa	agaaaaaaga	ggaacaggaa	aaaaataaat	atgtgaacga	caaacaaaaa	780
aataaaaataa	aacaggaaaa	attcgataaa	acttctaaca	cattacaaaag	ttaaaggtaat	840
atctcttcat	ttataaatca	agacctctat	catactaaag	aaataattca	agatattata	900
ttacacagta	aaaaatacgt	gaactatcaa	tttttaattt	ctcatataaa	agacgaaaaa	960
gaattacaga	aagggtatgat	cttagaagggt	atgggttgtat	catgtaataa	tacaaaaatg	1020
tatctttaat	taaatatgag	aaagaggggg	gtcatttttaa	attatgtaca	aaataaataa	1080
gaaataggag	atatagtaaa	ggctgttatt	gtaaacttta	ctagaaacga	ttatatattt	1140
ttaggacttt	atgatgagaa	aattttgact	cttgacgcgc	aaaaatatat	ccctcgcgag	1200
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<210> 253
 <211> 1065
 <212> DNA
 <213> Plasmodium falciparum

<400> 253
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 ataataagta aagcgtcaca ttttagtact cagcatggac aatatgataa gagtgaaagg 120
 atttgtaatt ttggattcca aaaagtaagc gaagaaataa aatctcgatt agtctacaat 180
 ttatttagta acgtatgtaa taaatatgat attatgaatg acatgatgag tttgctggta 240
 caccgtttttt ggaaagatca atttgttaaa gaattagata tacttttaaa atatcatagt 300
 tacaatatac aagattatgt atatcaacat tataaagatc attcatcaaa caatgaaaag 360
 atacaaaaaa aaaatgaaaa cacatctgat acgaatgggt atagtaataa ttatagtgtgta 420
 tattcagata tacctaatta taaaatacta gacttagcag gaggtactgg tgatattgcc 480
 tttcgtatat tagaaaaaag taaattttat cttaaaaaaa ataatcaatc cattcctttt 540
 gatcatatat cctatcaaca atatcttcct catatcatcg tttgtgatgt aaacaatgat 600
 atgtttaaag ttggtaaaaa gaaagcagct acattaggat atgatcaaaa atgactttgg 660
 ctagtccaag atgcagaaaa tcttgaatca gtagaatcca attctataga tgtaataaca 720
 ttatcatttg gtattagaaa ttttacaat attcctcaag cattaaaaga aatacatcga 780
 gtattaaaac caggaggaag attccttatgt ttagaattta gtaaagtaca atgtcatata 840
 ttttaatttt tctataaatt ttatcttaat aatgtaatac ctataattgg aaaagtagta 900
 gcaaatgata tgaaggcata taaatattta gcagaaagta ttcaaaactt tctcacacca 960
 gatgaattag ctcaattatt tcatcaagcc aattttaaaa atataacgta cagcaccatg 1020
 acaatgggca tcgtttctat acattcagca tacaagttgg tgtaa 1065

<210> 254
 <211> 1527
 <212> DNA
 <213> Plasmodium falciparum

<400> 254
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 tcaagagaac tagaaaggat taataatatc attttaaaaat atagtaaaaa catagaaaca 120
 tgtaataaga ataaaaaaaa atgcttagat gaattgtata tattagcaag ttatgataat 180
 tttttaaaaa aaaaatatga aacgtatgaa tgtaatgttag acggatatat aaatgaagat 240
 aaagaaaaaga ttaaaataaa tgaagttaat aaaggaagaa ataaaaaaaa cgactgtact 300
 cctaataata ataaaatatt tttttataat gtccatttaa taaatgatga tgatcttttt 360
 aagagaagaa aaaataaaaa aaagaaaaag aaaatgataa ccttaaagat aaataaatgt 420
 aaccataaag ataaaaatatt acataaaaaat gagatgaaaag atggtgatca tgttttttca 480
 tatactaaaa agaagtgggt gaataataat aataataata ataataattac aaatatgggtc 540
 tcttttttgg gttatggaaa tataaaaaaga aagtatgtaa caaataaatg tattataaat 600
 gaacaagaaa ataataagat ggatgagaat caacatatgt ataaaaataa aaatattaat 660
 attaatatca atttcatatga tgataagaac gatgaaataa gaaaacattc aaccatacaa 720
 acactttatc atagtaataa taaagaaaaag ataatttcaa aaaatgttct aaaagatgaa 780
 agtacaaata taacaaaaaga atgtaattgt aataaatatg atgataatat tatagatcac 840
 aaacaaaaac acagggaaaa agaaaaaaag aaaagtatcg aaaatatgaa tataagccat 900
 ataatatatg aaaaagaaca atctcatgac atttgtaatg tattagaaga aaataaagag 960
 gaagaaaaat ataacaattt acaaaaagat gttataacaa attgtaataa tgataaggta 1020
 aaacttgaag aatatcatca tgaaaaagaa ttgaataatg ttcaaattat aaatgatatg 1080
 gatattaaaa agaattgaggc aaagaaggaa aaaaataata aaaaaaagga aaaacaaaaa 1140
 aataagaaaa atgaaaaaga aaaaaataaa aaaaaggaaa aagaaaaaaa taaaaaaaag 1200
 gaaaaagaaa aaaataaaaa aaaggaaaaa gaaaaaagta agaaaaagga aaaagaaaaa 1260
 aataaaaaaa aggaaaaaga aaaaaataaa aaaaaggaaa aagaaaaaaa taacggtgat 1320
 gtattaaaaac atgtggaaaa caatctacaa gatgtggaat tattgtatga agaaaaata 1380
 ataatgttca ataccaaaaa agatgaagaa ttaagtacaa aaaataaata tagtgaaaaa 1440
 gatattgttc atgatattct cagtgaatat tccaatacat tacaatatac aagtttcctt 1500
 gattatatga aaaataggat ggaataa 1527

<210> 255
 <211> 1941
 <212> DNA
 <213> Plasmodium falciparum

<400> 255
 atgtcgacta ttttaaatTT cgtaaaggaa caaaataaaa tgaatacatt acatatataaa 60
 aactttatta tggaaaatTT aaaagtcaca gaggaataaa aacatgataa agacatcaat 120
 aatttgatga gaagaattga acatgaagaa attaaagaac ttatatcgtc aaatgggaaa 180
 aggtatttta tggaaataag aaaaatatat ttcttatga aaaaatttca taaggaggga 240

tatttttcctt	cttctaataa	agatgtttta	aaaaagcaga	gttttaaaag	aaataaaaaa	300
ataaagaatt	tgttacaaga	atcgattaaa	aaaaaaaaa	tacagattca	aaaattactt	360
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aatgaacttt	taaaaagttt	cttttccttt	tctaataatc	aaagttatta	tttaaatcta	480
aaatattctc	ctccacatag	tagaagaaat	cgtatatatt	tttatcctta	tacaaaattg	540
ttgagacgga	aaagggttgag	gaggatctca	catttttaaag	aggatagata	tgttattcac	600
aaagggtccac	taacaaaaaa	aaaaaaaaa	aaaatataca	taaataaaaa	atatatatat	660
attatatata	tatatatata	tatatattat	atatttttta	tgtttttattc	ttttattttt	720
atagaatatt	tttcaaactc	catatttaga	aaatataccc	atcataagaa	aagatataaa	780
gaaattatac	aagatatatt	gaacgataac	aaactactaa	atctacattt	taaaagggtat	840
aaggaaaaat	ataaaaaagaa	aaaaaagaaa	aaattgcaca	tatcttctaa	aaggaagaag	900
gataaaaagaa	acttggacct	atattgtaaa	aaaaaaaaa	aagaaattat	atacacacat	960
ttgtttttac	ctacgagatt	aagggaaaaa	ataaacaaaa	gttcaaatta	taattatttta	1020
aataaggaag	gggaaaaatat	tataaataag	gaagaggaaa	atattttaca	taaggaagag	1080
gaacatattt	tacataagga	tgaagagaat	tatatgaagg	aggaagaaga	aaatatttta	1140
cataaggatg	aagaggaaaa	tattttatat	aaggaggagg	aaaatatttt	acataaggat	1200
gaagaggaaa	acattttata	taaggaggag	gaaaatattt	tacataagga	tgaagaggaa	1260
aacattttac	ataaggaaga	ggaaaatatt	ttacataagg	atgaagaaga	aaatatttta	1320
tataaggagg	aggaaaatat	tttacataag	gaagaggcaa	atattataga	aacgaaaaat	1380
gcggaagtaa	aaaagaaaaa	aaacacatta	agaaaaaaga	aaaaaaaaga	aaaaaaaaaat	1440
tttttaaatg	atcatatgaa	ggaagt tact	aagaatgatg	atgatgatga	tgatgatgat	1500
gatgatgatg	aaaataatat	gataaaggta	gaagaaaaac	aaaaatataa	tgatgaagat	1560
ggaaaggaaa	atgtgagtat	agataatgta	gaagagtgtg	acaaaatgaa	ggatgaatat	1620
gataagaagg	aaaacaatgt	ttctaataa	gaagaagaaa	atattatctt	ggattcaaaa	1680
gagcaaaaaa	ttattctcga	tacaaacaaa	gagaagttaa	tctcaaagga	aaaaaaaaaaa	1740
aaaaaaaaataa	gtagaaaaat	aaaaaaaaact	aaaatagaag	ataataagga	tattaaagaa	1800
aatgaaaatt	ttaatgaaat	ttatgatgag	aaaaatatag	ggaaaaaaga	agagtatatc	1860
atatatgagg	aaaaaaataa	agagcataat	gtaattacgc	agaaagacaa	tgcgaaaatg	1920
gataatatag	atgagcaata	a				1941

<210> 256

<211> 1452

<212> DNA

<213> Plasmodium falciparum

<400> 256

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gataagaaaa	aggggtgaaga	gaaaaagaaa	gatctcattt	ccaaaaaaaa	taaaaataaa	120
gataattctc	caaataacaa	taataaaaaat	aatgataaga	ataatattaa	gaataatgtg	180
ttgaaaaata	attccttatt	taataataaa	aaaaaaaaaac	attaccttta	tgatgttgat	240
aagactttat	taaataaaga	tatgaattgc	attaattata	catataaaaa	ccttaacgag	300
caaaaaacaa	attctccaaa	tacaataaat	gttaatatata	atgataagga	ttgtgatgat	360
aaccaaaaaa	ttatggatat	attttctata	gaaaaaaaaa	taaaaataaa	atatatccca	420
aataaaaaatc	atatgaataa	atataataat	aataatgatc	aaaataaatc	agacgataat	480
tttgttcatt	caataattca	tgataccttt	ttaaatacat	ctcttcaaac	aactcataaa	540
aacactttga	caagtataaa	aataaacaaa	ggtgttaaaa	aaaagacttt	tacacacaaa	600
gataaaaaat	attataatga	tgataatata	aaaacaaaag	aaaacaaaaa	aaataaaaatc	660
aataataatt	atacaaatga	tgataataat	tatgataata	attatgataa	taattatgat	720
aaataatgat	gtcaaaaatat	ttataatggt	aatataaaaa	aaaataatta	tgtaaatata	780
agtataaata	ctcacctaca	aaataataat	tatgaaataa	aaggaaatca	taaaaaggaa	840
aaatcattca	aagattgtaa	aaaagaatta	tatacaaatg	taaaagataa	aattacatta	900
caacataaag	aaaataaaaa	atatatagat	aattctatac	aaagcattct	aatcataat	960
gaacatagat	ctcttcaaaa	aaacattcat	atatataata	ataaacatac	acaaactaat	1020
aaagcttata	atattcaaga	ggtgcataat	ttttctataa	tttattctaa	acaaatttta	1080
caaacagcct	taatacaaat	aacatataaa	caaaatgtaa	accaaataaa	aaacaaaaaa	1140
gaagaaatta	taataaatga	tcaaattaat	aaacttaact	tttctatatt	aacaacacgt	1200
caacaaaata	atctccacat	tatgaatata	aacaaatcaa	tccatggagt	tctacaaaata	1260
tttaacaaaa	taaatacatt	cgccatgtcc	aataacataa	ttaatatttt	gatcaagaaa	1320
aatgttgaaa	cttataatga	ggtaaaaaaa	aaaaaaaaaa	aaaaaaaaag	aaaaaaaaaaa	1380
gaaagaaaga	aaaaaaaaaa	aaaaaaagta	tatgattatc	acatatgtat	gtttccttat	1440
attccaattt	aa					1452

<210> 257

<211> 1380

<212> DNA

<213> Plasmodium falciparum

<400> 257

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gaagaaaaaa	aattaagata	taatgatgat	gatatgataa	ataagaatta	tgaagagatg	120
cttgataaaa	ttgaagaatg	tataaagtta	agaaatggat	ataaaaatag	ttttgtttta	180
aaaaatcgc	aaatacctct	tgacatttat	gttattgaca	atattaatga	aaatgatgta	240
agaaggatga	taaaaaagaa	aaatagttat	aataataata	tattaaaacc	atttgaacaa	300
ttaatattag	atcattttta	tattataaaa	atattatgta	ataaaaaata	tattaatgg	360
gatactttta	taaatacaag	ttgtaaattc	ttatctactt	ttcttcaaat	ttattgtgat	420
aatttatgg	tattaccata	tttattaacc	atttgcctcat	ttttaataa	tataagtaca	480
ttagccgatt	cctatattac	tagtaataaa	aatgatatat	ataatgaaga	aaacgaagat	540
ataaataata	aaaataaata	tactattgaa	gtcctaaatt	ctattagagg	aaaaataggt	600
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ataaccataa	gattaaataa	aggtttatat	ccacccaaaa	aattattaca	aaaatataaa	960
ctttcaatct	atatagatat	tatttattcc	ataaaaaagag	gaaatatttt	cttatataat	1020
aatgttatga	ataacttttc	tagttatttc	tttcataaag	gtttaaacga	attgtatgaa	1080
caaattctatt	ttattgttaa	aagaaatctt	atcaaaattg	ttgtagattg	gtggaataaa	1140
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catattttca	aatgggcaca	tataacacaa	catcattcat	atttagaaac	tatatgtatt	1260
ataacatcac	ttatcttatt	tcgttatatt	aatgcatata	tatcttatga	taataatata	1320
ttggtcttga	gtaaaaatga	cccattccca	tccctttccc	acaaccaagg	gccacgctag	1380

<210> 258

<211> 399

<212> DNA

<213> Plasmodium falciparum

<400> 258

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tgtaaatgtt	tgaatttatg	tgagcttcaa	ttaattttgg	gagaccagct	tcgattaaca	120
tccaagagaa	atgaagaagc	tcaagcattg	attaaatcgt	cctatgatta	tgccaataaa	180
tttgctgcaa	taaaaaatag	aagttcaatt	gtcgatatta	gaactaactt	agaacgtata	240
ggcgattttac	atgaatatga	aatagccatg	ttagttaatc	ttttaccta	gaccatatta	300
gaagcttagat	atttaattcc	ttcgtttaatt	cgtttaaatg	acgaaaacctt	aaattctatt	360
ttagaacatc	ttataagcta	taaaatgtac	gtttcttaa			399

<210> 259

<211> 1908

<212> DNA

<213> Plasmodium falciparum

<400> 259

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aaagaactat	ctaatagaaa	gaatgaagag	tttaaattta	acatttttat	attttattac	120
aacaatatcg	attctatatg	tacggaacat	atttaccatt	tccataagaa	ttcgaaaaagg	180
gaaattaatg	tatttagtta	tggtgttgag	aaaaaagaag	acttaataaa	attttttaat	240
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<210> 260

<211> 279

<212> DNA

<213> Plasmodium falciparum

<400> 260

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<210> 261

<211> 2880

<212> DNA

<213> Plasmodium falciparum

<400> 261

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<210> 262

<211> 4551

<212> DNA

<213> Plasmodium falciparum

<400> 262

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gcacatcttt	atthttttttt	tttaagaata	tgtaaatat	tgtattataa	tataagaccg	300
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<210> 263

<211> 402

<212> DNA

<213> Plasmodium falciparum

<400> 263

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gttattaata	cagttttgtc	tttattatat	atataatata	ataatataat	tttcttaaac	180
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<210> 264

<211> 1704

<212> DNA

<213> Plasmodium falciparum

<400> 264

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<210> 265

<211> 7620

<212> DNA

<213> Plasmodium falciparum

<400> 265

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<212> DNA
<213> Plasmodium falciparum

<400> 266

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<213> Plasmodium falciparum

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<210> 269

<211> 819

<212> DNA

<213> Plasmodium falciparum

<400> 269

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 aatacttctg atagtcaaaa agaattgtacc gatggtaaca aagaaaactg tggagcagca 720
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 tcagcaacac ttgttttatc ttttgccata ttcataataa 819

<210> 270

<211> 819

<212> DNA

<213> Plasmodium falciparum

<400> 270

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 gaaggtggtt ttacaagtaa aaataaagag aatggaaata ataatagaaa taatgaaaa 180
 gaactaaaag aagaagggtt tttacctact aagatgaatg aaaaaaattc caattcatca 240
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 aatatccaaa aagaacctga agaaaaagag aacagtaacc ctaatttaga tagtagtgaa 360
 aattcgagtg aaagcgcaac acgttctgtt gatatatcag aacataattc taataatcca 420
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 gatcaaatat gtataaatat aaataatata ggagttaaat gtatatgtaa ggatggatat 720
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<210> 271

<211> 819

<212> DNA

<213> Plasmodium falciparum

<400> 271

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 atgagaattc taggggaaga aaaaccaa atgtggacggag taagtactag taatactcct 180
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 aaaaacagaca aggttcaaga aaagggttcta gaaaagtctc caaaagaatc ccaaatggtt 420
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<210> 272

<211> 5139

<212> DNA

<213> Plasmodium falciparum

<400> 272

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<211> 483

<212> DNA

<213> Plasmodium falciparum

<400> 273

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<210> 274

<211> 1809

<212> DNA

<213> Plasmodium falciparum

<400> 274

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<210> 275

<211> 2841

<212> DNA

<213> Plasmodium falciparum

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<210> 276

<211> 3126

<212> DNA

<213> Plasmodium falciparum

<400> 276

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<211> 2994

<212> DNA

<213> Plasmodium falciparum

<400> 277

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<211> 2889

<212> DNA

<213> Plasmodium falciparum

<400> 278

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<211> 2793

<212> DNA

<213> Plasmodium falciparum

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<212> DNA

<213> Plasmodium falciparum

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<210> 281

<211> 3015

<212> DNA

<213> Plasmodium falciparum

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<211> 3744

<212> DNA

<213> Plasmodium falciparum

<400> 282

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<211> 903

<212> DNA

<213> Plasmodium falciparum

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<212> DNA

<213> Plasmodium falciparum

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<210> 291

<211> 2040

<212> DNA

<213> Plasmodium falciparum

<400> 291

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<210> 292

<211> 321

<212> DNA

<213> Plasmodium falciparum

<400> 292

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<211> 723

<212> DNA

<213> Plasmodium falciparum

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<210> 294

<211> 822

<212> DNA

<213> Plasmodium falciparum

<400> 294

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<210> 295

<211> 1515

<212> DNA

<213> Plasmodium falciparum

<400> 295

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<210> 296

<211> 3417

<212> DNA

<213> Plasmodium falciparum

<400> 296

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<211> 1707

<212> DNA

<213> Plasmodium falciparum

<400> 297

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<211> 1374

<212> DNA

<213> Plasmodium falciparum

<400> 298

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<210> 299

<211> 246

<212> DNA

<213> Plasmodium falciparum

<400> 299

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<211> 291

<212> DNA

<213> Plasmodium falciparum

<400> 300

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<211> 7722

<212> DNA

<213> Plasmodium falciparum

<400> 301

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<212> DNA

<213> Plasmodium falciparum

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<210> 303

<211> 4041

<212> DNA

<213> Plasmodium falciparum

<400> 303

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<210> 304

<211> 810

<212> DNA

<213> Plasmodium falciparum

<400> 304

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gaccagatat	atacttctct	ttttattgaa	acaattatat	ccgttcaaaa	aaatcaaaaca	300
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aaagaaacgg	accttagcac	aagtgcagtat	atcataattt	tttttcaaaa	catatataaaa	420
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tttttagcca	tataataaaa	catatcaaat	ttggttcctg	aagataaaat	tcgtttgttc	540
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aagtattact	tttacttgca	ttttttttaa	ggcaaatttt	actggtgtta	ttataacgaa	660
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<210> 305

<211> 945

<212> DNA

<213> Plasmodium falciparum

<400> 305

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agtatagaat	taaataaaact	tataaaagat	acaaatgatt	taattaatat	aataaaaaatt	360
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caaaatttag	taaaatggaa	attacaaggt	catcaagatt	taaaaaatgc	attaacagac	660
gtagaaacaa	aataataaaga	tgtaaaaaca	ttagaaaaaa	gtgtatgtga	tttacatcaa	720
acaataatag	aattatctgc	attaatagaa	atgaatgatg	aaattattga	taatattttat	780
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agaaacatac	aaaaaaaaac	ttctaaatgg	atgttctatt	taaccgtgac	aatcataatt	900
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<210> 306

<211> 1248

<212> DNA

<213> Plasmodium falciparum

<400> 306

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aagattcccc	aaacaattaa	tttgataaga	gggaaatata	atttattaca	tgagatatat	240
gtaaataaga	agaaacatat	ttttaatgtg	atttataaaag	atatcataag	taataataag	300
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attacatata	atgatttttaa	tgatcaagtg	gaaacaaaaa	aagaaaaagtt	ttatattttca	780
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gaacaaaaat	ttgaaacaac	attaattaat	aatatggaaa	agcaactcaa	aatcaaatta	1080
ccaaatatag	gtttaaccac	tataacaaat	ctttctctta	ttctgtttta	acttttttgca	1140
aataaaaatta	ctcaagttgt	cttttatctt	attctagtgt	atataaaaaca	attcttgtat	1200
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<210> 307
 <211> 855
 <212> DNA
 <213> Plasmodium falciparum

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 gattataaaa aaagtagtat attttctaaa aaaagagatt ctcataaaaa aggatcaagt 180
 tttaggggaa gaagatctgg atttatcaat agaaaatcag gaagttttta aaagccatat 240
 tataataata gattaattaa caaaaattat aataactata aaggtagaaa ttttcataat 300
 ggaagagata attttaaaagg acgaactgga agtttttggt cactgtgtctt tgataatcgt 360
 aaaggatctt ttaaaaaaag atttataagt aatagaata aatcatctgt aaaatcatat 420
 agaggaaatg gttctaataa aatgggtaga aaatcattta acaaagcacc tacatcaaga 480
 acagttgttta ctaaaagatt aaataattat aaaactgttt cagctccagt gaaaaaattt 540
 aataacttaa atatttcctt atatcgtaaa aatagaacat ttgcattaaa taccaagaga 600
 tctaaacctg taggaacaat taaaagtatg gtacctagaa aaagaattaa gaaagggttta 660
 aaaaaaggga gcttgaaatc aaaaactaga aaaagtacat cgggatcaaa attttaaactt 720
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<210> 308
 <211> 3366
 <212> DNA
 <213> Plasmodium falciparum

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 aatgaaaaaa gaacgaacaa aaaaatttat aaaaaaagca aagcgagtc tctcttcgat 180
 aaagggttta atatacacga taagcttaata ttatttaaaa atttacccaa atacaaatgt 240
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 aaatgcttta attatataag tttgtgtgat attatacaaa gtgttaaaat atttgatgaa 360
 cttgataaaa catttactga ttacaatttc tatatagaag ttaaaaaatat agacaaaaat 420
 gtattaaata agattaatga aatttatttc aaaaaataagg atataacttt tcatagaaga 480
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 gaattaattc attttcttat ttactttttt agatggaata agaacgataa gaatttgatt 600
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 atatacaaac tattattcat atttaataaa tatcttaata ataattcaaa cataccattc 720
 aataaaaaatc taatacagga aatggaattt aatctatatt attttaggga aataaaaaat 780
 gagaaaaatt atattattaa aatgaataaa aaggaaattt ataaaaaatg ttttgcaaa 840
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<210> 309

<211> 708

<212> DNA

<213> Plasmodium falciparum

<400> 309

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caacataata	attataatga	aaacttatgt	aatataaaat	ttgatatatg	ggatacagct	300
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<210> 310

<211> 1155

<212> DNA

<213> Plasmodium falciparum

<400> 310

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<211> 3738

<212> DNA

<213> Plasmodium falciparum

<400> 311

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 <212> DNA
 <213> Plasmodium falciparum

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<211> 1833

<212> DNA

<213> Plasmodium falciparum

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<211> 1224

<212> DNA

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<210> 316

<211> 936

<212> DNA

<213> Plasmodium falciparum

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<212> DNA

<213> Plasmodium falciparum

<400> 317

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<211> 5454

<212> DNA

<213> Plasmodium falciparum

<400> 322

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<211> 753

<212> DNA

<213> Plasmodium falciparum

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<213> Plasmodium falciparum

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<210> 325

<211> 3675

<212> DNA

<213> Plasmodium falciparum

<400> 325

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<211> 1098

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<213> Plasmodium falciparum

<400> 326

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gaagagcctg	aagtattaac	aaaaatattc	aatttgatga	aaaataataa	ctgtttaaat	300
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gaaaattatg	aatatgaaaa	tacgtggact	gtacattgtg	atgctagttt	tatttgtaga	420
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<210> 327

<211> 501

<212> DNA

<213> Plasmodium falciparum

<400> 327

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tttaaaagcta	ttaaaaatga	aa	attgtcct	ttaagttacc	tacaattaag	attatggaga	360
aataaaaact	gttatgaaca	ata	tgtcaat	aataaaaata	tacaaacttt	attaacaaac	420
ttaaaggata	cttgttatatt	ct	attctact	caaaaatata	aaactattgt	agatgattcg	480
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<210> 328

<211> 987

<212> DNA

<213> Plasmodium falciparum

<400> 328

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tcaaaaaaag	aagcagaaga	aaa	atttaag	a	atattgtctg	aagcatatga	tgtttttagca	180
gatgaggaaa	aaaggaaaat	tt	atgataca	t	atggagaag	aaggattaaa	aggttcaata	240
ccaacegggtg	gaaatacata	tgt	ctatagt	g	gtgttgatc	cttcagaatt	atttagtaga	300
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ttttccactt	ttgtcaacat	gac	ttctaga	a	aatctagac	catccacaac	aacaaatatt	420
aatacgaaca	attataacaa	acc	agccaca	t	acgaggtgc	ctctttcttt	atccctagaa	480
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ttagttttta	aagtaaaaaac	c	aaaacacat	g	atagattcc	taagagacgc	taatcattta	720
atatataaat	gtcctgtacc	tt	tagataaa	g	ctttaacag	gattccaatt	tattgttaaa	780
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aaaattgtag	caaaagaagg	ta	tgccttct	t	ccaaatacc	caagcatgaa	aggggatctc	900
attgtagaat	ttgatattgt	ct	ttccaaaa	a	agtttaacca	gtgaaaaaaa	aaaaattata	960
agagaaacat	tggcaaatat	a	ttctaa					987

<210> 329

<211> 360

<212> DNA

<213> Plasmodium falciparum

<400> 329

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aaatattcac	cttcacattt	gt	ccagaaaa	t	gtgtagttt	ttttttccaa	caaacaaaat	300
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<210> 330

<211> 963

<212> DNA

<213> Plasmodium falciparum

<400> 330

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aagtatgatg	atttcaaaaa	tg	agctacaa	at	ataaacag	atataaaaaa	tgaatactgt	300
ttaacttggtg	aagggtatcat	aa	caaatat	ga	tgaggtat	atataatata	tgagtatatg	360
gaaaacgata	gtatttttaa	att	cgatgaa	ta	ctttttttg	tcttagataa	aaattacact	420
tgtttttattc	ctatacaagt	ta	ttaaatgt	at	tataaaaaa	gtgtattaaa	ttcgtttttct	480
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<210> 331

<211> 1164

<212> DNA

<213> Plasmodium falciparum

<400> 331

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caacaaagaa	aagataaaat	cattactagt	aatgaactta	tagatatttg	tgacaacata	360
gaagaaaaaa	atccttttct	attttttctt	aactcacaat	taaataacac	tataagtaat	420
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<210> 332

<211> 6042

<212> DNA

<213> Plasmodium falciparum

<400> 332

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<210> 333

<211> 465

<212> DNA

<213> Plasmodium falciparum

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<210> 334

<211> 2010

<212> DNA

<213> Plasmodium falciparum

<400> 334

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<210> 335

<211> 3501

<212> DNA

<213> Plasmodium falciparum

<400> 335

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<210> 336

<211> 1623

<212> DNA

<213> Plasmodium falciparum

<400> 336

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<210> 337

<211> 4317

<212> DNA

<213> Plasmodium falciparum

<400> 337

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<211> 522

<212> DNA

<213> Plasmodium falciparum

<400> 338

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<210> 339

<211> 7503

<212> DNA

<213> Plasmodium falciparum

<400> 339

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<212> DNA

<213> Plasmodium falciparum

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<212> DNA

<213> Plasmodium falciparum

<400> 342

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<210> 343

<211> 462

<212> DNA

<213> Plasmodium falciparum

<400> 343

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*tacaataac	ctcaagaatt	aaagaaaaat	ataataacaa	ataatttaca	tgatgaaaaa	180

gtaataacttta	cggataataa	tatgaaagag	aaatgtaacc	atattgaccg	cgatactatt	240
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aaattccttac	taagggtttt	agaaaaataa	aaaaatatag	aattagaata	taaaaaagca	360
ctagaaacac	aggcagccta	cgtaaattct	gagaataaaa	aatcacaatt	ttatgaaaac	420
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<210> 344

<211> 3837

<212> DNA

<213> Plasmodium falciparum

<400> 344

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agaaggagac	gaagaagaat	acgtgcacga	gaatataaca	atgctaaata	taacaagaat	180
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<210> 345

<211> 1998

<212> DNA

<213> Plasmodium falciparum

<400> 345

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<210> 346

<211> 2658

<212> DNA

<213> Plasmodium falciparum

<400> 346

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aaatcaaaaa	atggtgatga	agggcaagct	gtaggtaata	atggagaaaa	ggaagaaaaa	720
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<210> 347

<211> 735

<212> DNA

<213> Plasmodium falciparum

<400> 347

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<210> 348

<211> 2667

<212> DNA

<213> Plasmodium falciparum

<400> 348

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<211> 2919

<212> DNA

<213> Plasmodium falciparum

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<211> 2295

<212> DNA

<213> Plasmodium falciparum

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 <212> DNA
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<211> 2700

<212> DNA

<213> Plasmodium falciparum

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<211> 306

<212> DNA

<213> Plasmodium falciparum

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<211> 2169

<212> DNA

<213> Plasmodium falciparum

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 <211> 4197
 <212> DNA
 <213> Plasmodium falciparum

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<211> 2061

<212> DNA

<213> Plasmodium falciparum

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<211> 2943

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<213> Plasmodium falciparum

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<210> 363

<211> 3369

<212> DNA

<213> Plasmodium falciparum

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<210> 364

<211> 1650

<212> DNA

<213> Plasmodium falciparum

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 <213> Plasmodium falciparum

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 <212> DNA

<213> Plasmodium falciparum

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<210> 369

<211> 5454

<212> DNA

<213> Plasmodium falciparum

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<210> 370

<211> 426

<212> DNA

<213> Plasmodium falciparum

<400> 370

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aacagaagta	gatcatatgc	aaatattttc	gtttatgaaa	attttaagat	agtatatagg	180
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gagttcattc	atttttatggc	tcaactttta	gatacctttt	ttacaaatgt	ttgtgaatta	300
gatttgcttt	ttaattttca	ttttttatat	tatttttttg	ataatataat	attgggtgga	360
tatatatatg	aaattaatag	aaacattata	ttagataaaa	taaataaaat	aaaaaagtta	420
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<210> 371

<211> 321

<212> DNA

<213> Plasmodium falciparum

<400> 371

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actttttcaa	cagaatttaa	aatattttata	acaggtataa	taattagtat	gtgggtgtgtt	180
tttgctatttt	atttaactat	aagaattatg	tcacctgata	acttttgattg	gggtgaggat	240
gaaagaaaaa	gattagaaga	tgccaagaaa	aaaattattt	taataaaaaga	aaaaaatatg	300
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<210> 372

<211> 1575

<212> DNA

<213> Plasmodium falciparum

<400> 372

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ccagggtatgt	atgttagaaa	aaaagaaggg	aagatagggg	agtcctattt	caaagttcgc	180
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gagaaggcta	ttaaggttat	aaagaagtcc	caatttgata	agatgaaata	ttcgataaca	300
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aaatcatttag	atcatcctaa	tataataaaa	ttgtttgatg	tttttgaaga	taagaaatat	420
ttttattttag	taaccgaatt	ttatgaaggt	ggggaattat	ttgaacaaat	tattaatcgt	480
cataaaatttg	atgaatgtga	tgctgcta	ataatgaaac	aaatattaag	tgccatattg	540
tattttacata	aacataatat	tgtacatcga	gatattaaac	cagaaaaat	tttatttagaa	600
aataaacata	gtttattaaa	tataaaaatt	gtcgattttg	gtttatcttc	ctttttctca	660
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<210> 373

<211> 822

<212> DNA

<213> Plasmodium falciparum

<400> 373

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tatgtaaata	attattttaaa	taatttatatt	gatccagaaa	aaaataatga	aatctatttt	180
agtacaaata	gtgatactat	ttcagaagta	gatgaaacca	attatcatga	aaaggtaaat	240
aataaatcga	tagaacaata	caaaaaattt	gaaaaagatg	aatccttaat	aaatcatcaa	300
tccatagaaa	acaaaagaaa	cacacaaaat	gaattagatg	ataatgaaca	aaatatatta	360
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aatgaatcgt	atgcagactc	cccaagttgc	tcacaatata	tgtcacaaaa	tatgtcacaa	480
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atztatcaga	acctagttga	atacaaatat	gcattccagca	ccaccgatat	atatattaaa	600
gaaaaaaatt	atttttccaa	aaaaaaaaaa	attaaagtaa	aaaaggaaaa	taaaatgaaa	660
ctcttttagaa	atataaataa	aaatgatatt	tataatttgt	ttcacgaaga	aatatgtaga	720
ttatgtaaaa	ataaaaaata	tcacatttct	aagacaaaag	ctgatgacct	tttcttttat	780
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<210> 374

<211> 3582

<212> DNA

<213> Plasmodium falciparum

<400> 374

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gatgagataa	taaaaaagac	aaacatcgag	cccttgatca	aattatatga	ggaattaaaa	180
ttattttttac	tttatttttt	ccataaatta	ttatataatt	tattaactga	acaagataat	240
ttacctcgaa	atatttttcaa	atattttacaa	ataaacaata	atataatata	taataagaaa	300
aaaaaatata	acaattttgtt	atcgataaac	tctaaaaaaa	aagattcgag	tgaatttttt	360
aatagttatt	atagatatac	aaattcgata	aatgaaaacg	ttgtgttctt	atcatttttt	420
gaaaactttt	atctctttta	tacattttacg	aataatggac	aagcttccag	ttctttttcc	480
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aataataatt	atataatga	caaaagtggg	aaagcatttt	ctcagaaaaa	tgaatatgaa	660
gatataataa	taacaaaaga	tcacacagcc	ctcaacaatc	atgaatatga	tcattctttc	720
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<210> 375

<211> 324

<212> DNA

<213> Plasmodium falciparum

<400> 375

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tcacgttttg	ttcgtgtaag	atcaagagaa	caaagaagag	taagaaaaga	aacagctaaa	300
catgttaacc	catcccaatt	ataa				324

<210> 376

<211> 1560

<212> DNA

<213> Plasmodium falciparum

<400> 376

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<210> 377

<211> 993

<212> DNA

<213> Plasmodium falciparum

<400> 377

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tttgttacga	acacagaata	tgaagattct	ttaaaatata	aaatattatt	agaactttcc	900
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<210> 378

<211> 924

<212> DNA

<213> Plasmodium falciparum

<400> 378

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<210> 379

<211> 2424

<212> DNA

<213> Plasmodium falciparum

<400> 379

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<210> 380

<211> 1056

<212> DNA

<213> Plasmodium falciparum

<400> 380

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<210> 381

<211> 1689

<212> DNA

<213> Plasmodium falciparum

<400> 381

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<210> 382

<211> 306

<212> DNA

<213> Plasmodium falciparum

<400> 382

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 cgtgaaatat gggtagaagt tgtaaaagat aaaaaaaaaa aaaaaaaat taacaaggat 240
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<210> 383

<211> 7143

<212> DNA

<213> Plasmodium falciparum

<400> 383

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<210> 384

<211> 1449

<212> DNA

<213> Plasmodium falciparum

<400> 384

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<210> 385

<211> 1281

<212> DNA

<213> Plasmodium falciparum

<400> 385

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atttattttat	atttaagtgg	gaaaaatgaa	gaccctggat	atttggttaag	tgcaaaaaatt	1140
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 <212> DNA
 <213> Plasmodium falciparum

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<210> 387
 <211> 1017
 <212> DNA
 <213> Plasmodium falciparum

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 gaagatgcta atattataag acttaacaaa ttaattttcca tgaaaagaaa tatttcaaga 180
 agaaaatcag atgaatttat taaagatgga aaagttaaaa taaacaataa aataataaca 240
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<210> 388
 <211> 2715
 <212> DNA
 <213> Plasmodium falciparum

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 agtaataaaa aagtggaaaa atccaaatcg aaaaaaaaat gtgacgctat atatattgat 180
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 aaggtcacta aagaagacac aaaaagtaac aacgttagtc ctaaaaatga aatcaataaa 480
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<210> 389

<211> 675

<212> DNA

<213> Plasmodium falciparum

<400> 389

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<210> 390

<211> 858

<212> DNA

<213> Plasmodium falciparum

<400> 390

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tgtgtcatga gatataaatg gatcacaatc attcctttta atttccccc aaggaagtat 840
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<210> 391

<211> 693

<212> DNA

<213> Plasmodium falciparum

<400> 391

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<210> 392

<211> 4677

<212> DNA

<213> Plasmodium falciparum

<400> 392

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<210> 393

<211> 3045

<212> DNA

<213> Plasmodium falciparum

<400> 393

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<210> 394

<211> 1974

<212> DNA

<213> Plasmodium falciparum

<400> 394

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<210> 395

<211> 678

<212> DNA

<213> Plasmodium falciparum

<400> 395

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<210> 396

<211> 981

<212> DNA

<213> Plasmodium falciparum

<400> 396

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<210> 397

<211> 579

<212> DNA

<213> Plasmodium falciparum

<400> 397

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<210> 398

<211> 2223

<212> DNA

<213> Plasmodium falciparum

<400> 398

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<210> 399

<211> 747

<212> DNA

<213> Plasmodium falciparum

<400> 399

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agtgttaattg	gttctacatt	aattgctgta	tctgcaggta	tccttgccagc	tattatatta	660
tttaattatat	taacaattat	aatagtttgg	ttacttgta	catggttatg	gtctcataag	720
gatgagtatt	acaaaacaag	tgaataa				747

<210> 400

<211> 924

<212> DNA

<213> Plasmodium falciparum

<400> 400

atgaatatat	attacattaa	tatgttagta	atgtccattt	tattgattgt	tttattttta	60
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caaatgataa	tgatgaaatc	aagacgttta	gctgaaattc	aattgcctaa	gtgtccacac	180
tataacaatg	atccagagct	taaaaaaata	attgacaaat	tgaatgaaga	aagaattaaa	240
aaatatatag	agactaataa	ttcttttgaa	gaattacacg	gattattagt	gaaagaaaga	300
accaaattctt	tatatgagaa	tggtatgaag	aaatcctcga	atatggaaaa	ggaattattg	360
aaaaaatatg	atgattcaat	tcgtgatgaa	cataatgtta	tctcaaaatc	aggaattttac	420
acaagtgatt	atagaaaatt	atatgataaa	tcttggtgatt	atcaaaatca	aaagatattg	480
agagatgaat	tggcttcacg	ctgtaaggta	catgataatt	atttagataa	tttaaaaaag	540
ggttgctttg	gaggtgtagg	tatatgtaca	ttgtgctctc	ttcttgtgag	caatattggg	600
attggatatg	ctgtgactgc	tgctaaagag	gtaattaccg	gtttgtattc	tttagatatt	660
gctaataaat	ttacgaaggc	gcttgctggg	atctattttc	tttttagttc	ttcaatcgag	720
aatgctgggtg	tttctgggtg	tactattttt	tattgggatt	ctatgagaat	ggctagttat	780
tgagtttcta	ctattaatcc	ttatgggtat	gcagctctgg	tattaattgt	attagttgtt	840

gtactttatag tattatatat atgggttgtat agaagacgaa aaaaatcatg gaaacatgaa 900
tgcaagaaac atttaagcac ctaa 924

<210> 401
<211> 330
<212> DNA
<213> Plasmodium falciparum

<400> 401
atgaacttaa aaaaatacag taaaaacgaa gaatgtaaag aaaatatgga taattactta 60
atgtatcttc gtatgcaaga tgatataaaa tatttagaaa gaaataatac atggaataat 120
atttggattg ttacaatgac cttattttta atcattataa tgatagcatg tatattttct 180
gttggtatta ctcacgcac tgcatTTTT cctgcacttt ttcttgcatg ttttttaata 240
tatatgtatg ctcgtTTTT tcttaaaatt aaaataactt ttaccgaatt aaaaaaaaaa 300
ttgtacaaat tttttcaaaa aaaaaataa 330

<210> 402
<211> 411
<212> DNA
<213> Plasmodium falciparum

<400> 402
atggaaaatc agatgcaaga tcatatagat gattctatag acaaccctat ggatgattct 60
atgaatgata aattggaaca taataattca ttagaagata gcataaaaga atactataca 120
ttaacaaacc catcagttga tgaagaaaat aaatcatttt ttaaaaaact taaattaatt 180
atgaatatat tagatgacgt gcattctgat ttattagtaa ataataatgt tacagatgga 240
agtatttttt ctctcgaact tgtacctata agtcttttat taaccaaggc attaacctgc 300
ccacttatag gaactgtgac tctttcttat attactagca gaataaattt cttgaataaa 360
tatgaaggag aaaatatata cacaaaacat gaatcaaaaa tatttaaatg a 411

<210> 403
<211> 909
<212> DNA
<213> Plasmodium falciparum

<400> 403
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tctgacaaat tatcttcatc aaatgaagca gatgaaccaa ataaaatgca agaaccat 180
ataatagaag aatcaaataa aatagaagaa cctaataaaa tagaagaaca aatatataa 240
gaagaatcaa ataaaataga agaatcaaata aaaatagaag aaccatataa aatagaagaa 300
tcaaataaaa tagaagaatc aaataaaaata gaagaatcaa atataataga accaaatata 360
atagaagaat caaatacaat agaagaatca aataaaaatag aagaatcaa taaatagaa 420
ccaaatataa tagaagaatc aaatacaata gaagaatcaa ataaaataga agaatacaat 480
ataatagaag aatcaaaatac aatagaagaa caaaaataaaa tagaaaaagt gaatcaaca 540
aaatcaccat taaggaatca tcagatccaa ataaaataa ctattgataa aataattcaa 600
aattccaatg gagatgaaaa acttcaaaga cttagagagta catcctgggt aataaataat 660
atggaatcat ctgaagaagt taaacagaga cttagagggc tagcacaatc atacatatat 720
aaccagatg aatcaaaaaa aagaaaaata attaaagaaa tttataaata tagtaaaaaa 780
gaagaaaata atgatattaa aaatatgttc ttaaaaatac ttaaattgtg agatttaagt 840
aacacagagc ctcgagagta tcatTTacct ttacaaggat tatctagacc ttgttatctt 900
ttcgtataa 909

<210> 404
<211> 306
<212> DNA
<213> Plasmodium falciparum

<400> 404
aataatctta gtaatgatgt ttcaggaata tgtactgtta tgaaatatag ttttgcagat 60
cttcgcgata taattaaagg aacagatttg tgggatcaaa acaatgatgc aaaacgatta 120
caagaaaatt ttaaaaataa atatggtaaa attaaaggta cacttggtgc caaatatgcc 180
cgtgatgac ccccatatac aaatttacgt caaaaactgg ggggaagcaat gaaatgtcgc 240
ataccagaat tacgtgcagt accagataaa caaggttact tacgacataa attggaatgt 300
tcctga 306

<210> 405
 <211> 849
 <212> DNA
 <213> Plasmodium falciparum

<400> 405
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 gaatatattg aaaataccaa agtacctatt tttgttaaatt ttttttttgg gaaaagtatt 120
 tttattgaag atatatattta ttatgttggt atgattatga aagaaatgat ggaagggcaa 180
 aatataagag aagaggaagt agctgaatta ttaaaagata gattagattt atatatagat 240
 aatgaagatg aatgggagaa gttaattggaa aatgaaatta gcatgttatt aaagtcttca 300
 ttttctaatt ttatattaga atctatagga tggacatatg agaatgtttc taatattttt 360
 ttagaagaaa aagcaaattc tggatataaat aaaaaagata tatattttaa agaagctaatt 420
 gagagaatga ttagaaattc aattgttttg agacaatgta aaagtcgttt tatatctata 480
 ataacaaatt attatccttt taaagaacaa aataatcctt ttataaagca ggcacaatat 540
 gtatcctcat ctaattatgt attggatgat ataataaata atatagacta tagtatagat 600
 aatatacata gagccataga taatttatac tatgaacata tattaatttt attagaggaa 660
 gaaaaaaatg aaatactaga agaaatatta aggaatattc taaaaattat tttgtgtgat 720
 gttgaaacaa cggtagaag atcagcacia aaagtattac aaaatgcaga aggagatata 780
 aatttgatgc ttaaaagagc taaaggatta caatcattgg gtaaaatgat attacagaag 840
 gttaattga 849

<210> 406
 <211> 561
 <212> DNA
 <213> Plasmodium falciparum

<400> 406
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 ttttaaggaca aaaaaaaaaa aaatcttgat cctcaaattt catctctagt tagtttagta 120
 gataatatgg atataactca agaaaaaaaa gataaaatca aaaatctctc attaaaaat 180
 ataaatagta gagatgtaaa agaaaaaaaa gaatcaatta atgaacttca aaaatatagt 240
 aataacgaag aatgtaaaga atatatggat agttatttaa tgcattctcg tatgcaaaat 300
 gatataaaat gtttaaaaag aaaaaatttg tggaaataata tttggattgt ttcaacgacc 360
 ttattattaa tcattataat gatagcatgt ataattgtat gtacacctga aacatatact 420
 gcattgtacc ctgcatttat tcttttaatt tttattatcc atatagttgc tctgtatttt 480
 cctgacatga aaataggttt taaaaaatta aaaacaaaat tgaacacatt ttttcaaaac 540
 aaaaagcaaa taacaaaata a 561

<210> 407
 <211> 693
 <212> DNA
 <213> Plasmodium falciparum

<400> 407
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 ataaatatag caagtcgaat actaacagaa aataataaaa aatgggtataa gaaatatatt 180
 tatacatcaa ttttagtggt aaataaaaaa ccacaaaaaa gagaaagaaa aatgaagag 240
 gaaaatcaaa aagacaatac aaaagtggat aatgataata atatggaaaa tgagatggaa 300
 aatcatatag atgattctat agacgaccct atggatgatc ttatgaatga taaatgggaa 360
 catcataatt cattggaaga tagaataaaa gaatactata cattaacaga cccatcagat 420
 ggcaagaaa ataattcatt ttttaaaaaa cttaaatata ttatgaatat attagatgaa 480
 gtgcattctg atttattaat aaataatagt gttacagatg gaagtatttt ttctcccgaa 540
 cttgtacctt taagtgtttt atcaaccatg acattagcct gtccacctat aggaactgtc 600
 actcttcctt atattactaa cagaataaat tttttgaata gatatgaagg acaaaatata 660
 cacacagaac atgattttaa aatattttaa tga 693

<210> 408
 <211> 774
 <212> DNA
 <213> Plasmodium falciparum

<400> 408
 atgggttgaag aaccgtttga gaaaaaagac aaatctggtg ttttattaaa agacaaaaat 60
 aatgaagagg gaagaaaaaa agaaagacaa aagcctatga gtattaaatc aataataaaa 120

aaaaaaaaaa	aaaacaacaa	caataataat	aataataatg	tgttaaaaaa	tttaaataat	180
gaagaaataa	ataaacaacg	aaatatgacg	aatgaaagaa	tacgaaataa	aaataaaaaa	240
gataaaggag	ttgagaatat	ttcaagtaat	acacagatgg	aagaaaaaaa	tataatatgt	300
aaagatataa	attcgaatgt	aatattaaat	caaaacgaaa	taaatgacga	tcaaattggt	360
caaaaaataa	aagaaaattt	tgtcaaggat	ttaatgaaaa	atgaaaacaa	agaaatat	420
aaacagatag	aaacaattaa	ttcagttggt	actatggcaa	aaattaaaaa	ttcattatat	480
agcataatat	ttaaagggtc	taatttttgg	aagggtctag	gaatatattt	atgtacattg	540
tcaggtgctg	cactagggca	attgatttta	gcaggatttt	tgcaattcgg	aacattttct	600
gttatgaatt	tttcaattta	tttttcagct	gttccttcac	ttatagcatt	cagtagtttt	660
gtaggaataa	tattattaag	cattataatt	gttatttgct	ttcttggtg	gttggtggcca	720
tcaagaggga	aattgatggg	taaagataaa	acagaaaaata	aaagtgtatc	ataa	774

<210> 409

<211> 924

<212> DNA

<213> Plasmodium falciparum

<400> 409

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gatcgacaaa	catcacaaacg	ttttgaagaa	tacaatgaac	gtatgaacaa	aaacagacaa	120
aaatgtaaag	aacaatgtga	tagagatata	aaaaatatta	ttttaaaaga	taaaattgaa	180
aaagaattaa	aacaacagtt	agcaacattg	gaaactgata	tatctaccga	tgatatacca	240
acttggtgtt	gcaataaaatc	agtagcggac	aaagtagaaa	aaacatgttt	gaaatgtgga	300
ggtgtgttgg	gtggtgcagt	tccagaattg	ggtttattat	gtggttatgg	tgcatatgag	360
ttggtaaaag	ttgctattgg	agctgctgaa	aaagcggcta	tagctgaagg	tgctaaagcc	420
ggtattgctg	aaggtattag	ggtagccatt	aaaggaataa	aagatgcatt	caatatagag	480
tttttagatg	gtaaaacatt	agcagaagtt	attactggaa	aaacgtttta	taattcaacg	540
ttttttgttg	aaaaatttgt	gcaagaatat	aacacagtgt	gtttgtcttc	tactacttac	600
caagatacac	tattttgcca	ttatggttca	atgttcggag	ggaagggtga	taatattaca	660
gctatatcat	taaacgcgaa	aaacactgca	ataaaggctg	gtcaagctgc	tgcgaaaatg	720
actactgaaa	ctactaaggc	gcttacagcg	gaaaaaactg	gcgaggtaac	aagtacatca	780
gctatttttt	ctaattccat	ggtaattagc	tttattgtag	tagtaattat	agttattata	840
tttttaatta	tttatttaat	tttacgatat	cgaagaaaaa	aaaaaatgaa	gagaaaactc	900
caatatataa	aattattaga	atag				924

<210> 410

<211> 951

<212> DNA

<213> Plasmodium falciparum

<400> 410

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tcacatcatg	cgcatagtga	gaataaacia	tacattacac	catatacacc	aaatacttca	120
tcacgagtgt	taaccgaatg	tgacattaaa	atgtcaattt	atgataatga	tggggatatg	180
aaatctgtga	aggaaaattt	cgatcgacaa	acgtcagaac	gatttgaaga	atacgacgaa	240
cgtatgaaag	ataaacgccg	aaaatgtaaa	gaacaatgtg	acaaagatat	acaagaaatt	300
attgtaaaag	ataaaatgga	aaaatcatta	gcaaaaaaag	tggaaaaagg	ttgtcttagg	360
tgtgggtgtg	gtttaggagg	tggtgcagca	agtgttgga	taattggtcc	aattgctgta	420
aatgaagtga	aaaaagctgc	tttggttgct	gcagctcaaa	aggggtattga	ggtaggcag	480
gctaaagcca	ttgaagaatt	aggaaaaata	gtagggttaa	gtgatttttc	ttatttaaat	540
tggtctgcaa	tgattactgc	aacaacttat	tataaaccaa	tgaaacttgt	aaacatttgt	600
aactctgcaa	acagtatgtg	tactgattct	aatcctgctt	ttacgtcttt	attttgcaaa	660
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gaggctgcaa	aagctgcaag	tgacgcccgt	gaagctgcta	aaaatgctga	aaaagcccaa	780
atagccttgg	taaatgaaga	aagtgcacat	ttgtacagtg	caattgggtta	ctccgctatt	840
gccatattga	ttatattatt	ggttatggta	attattttatt	taattttacg	ttatcgtaga	900
aaaaaaaaaa	tgaataaaaa	actacaatac	acaaaattat	taaatcaata	a	951

<210> 411

<211> 1107

<212> DNA

<213> Plasmodium falciparum

<400> 411

atgaaagtgc	attatatgaa	tatattattg	tttgctcttc	cattaaatat	attggaacat	60
aatgaaaggg	accataacaa	cactaccctt	catacatcaa	ttaccagatc	attatgcgaa	120
ttcgaattat	atgaacctgc	caattatgat	aatgaccaag	aaatgaaaga	agtaatgcaa	180

caatthtgagg	ttcgtacgtc	acaaagattt	cacgaatatg	atgaaagttt	gcaaagtaaa	240
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tgtggatgta	tattaggtgc	ggccatgcct	gaattgggat	cggtaggtgg	gagtccttta	480
tatgctttaa	atacctggaa	acctgtggca	cttaaggccg	caattgccgc	agctaacaaa	540
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caattaggaa	aatgggggtat	aaatgaattt	tgtcctgaaa	tatttgaatc	cattcttaaa	660
ataaaccatt	atagtaaaact	caaagatttt	gctagtgcga	ttgttgcaga	acatgataag	720
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aacagttgca	caacttctat	atatgcttct	attattgtaa	tattgattat	agttttaatt	1020
atggtaataa	tatatttgat	tttacgttat	cgacggaaaa	aaaaaatgaa	gaaaaaactc	1080
caatatataa	aattattaga	ggaataa				1107

<210> 412

<211> 1047

<212> DNA

<213> Plasmodium falciparum

<400> 412

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acatcacgag	tgtaagcga	atctgaccca	tatatgctca	attatgataa	tgatgatgat	180
atgaaatctg	tgaaggaaaa	tttcgatcga	caaacttcac	aacgttttga	agaatacgaa	240
ggacgtatga	aagataaaacg	ccgaaaatgt	aaagaacaat	gtgacaaaga	tatacaagaa	300
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gtaaaagagt	tggcaaaaac	ggctactgct	gcggcagttg	cagcagctca	ggaagcggtc	480
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actataaaag	tagctgtaac	atctatcgct	tcagatgccg	aaaatgttgc	tgcagcagct	840
gaacaacaag	ctactaagga	tgtataaaaa	gctagcactc	ttgcagtaga	ctctaaatat	900
gctatttggc	agaatgctat	tattgcttct	gttgttgcac	tattaattat	agttttaatt	960
atgataatta	tttatttagt	tttacgttat	cgtagaaaaa	agaaaatgaa	gaaaaaagcc	1020
gaatacacaa	aattattaaa	tcaataa				1047

<210> 413

<211> 915

<212> DNA

<213> Plasmodium falciparum

<400> 413

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aaaagaacaa	cgataaattc	aagattatta	gcacaaacga	aaaatcataa	tccacattat	180
cataatgatc	cagaactcaa	agaaataatt	gataaaatga	acgaagaagc	aattaaaaaa	240
tacaaaaaat	ctcatgatcc	atatgaacaa	ttgaaaagaag	tagtagaaaa	aaatggaaca	300
atatatacag	gtggaaatgg	tgcagaaccc	atgtcaacga	cagaaaaaga	tttattggaa	360
acataaaaag	aagtttttga	tgacgaaagt	gatattgtta	agtcaggcat	gagtcacaaat	420
gttgatgaaa	aatcttcaac	atgtgaatgt	actgatatta	atgggtgcga	attaacaaaa	480
acaaaaggaa	aagataaata	tttaaaacac	ttaaaaggga	gatgtaccgc	tggtatatgt	540
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gccgttgctg	ctgtcacttc	tagctttaac	gaagcatcta	agatttgcgc	atcctctatt	660
tctgtattac	atatgtttac	tcatgaatct	gtgactttat	ctatgccatc	agttactgca	720
gcaggaggtg	tagaatgttt	ttctgattta	gccggaacta	tttcaagtgc	tgctatgggt	780
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atattataca	tatggttata	tagaagaagg	aaaaattcat	acaaacatga	atgcaagaaa	900
catttatgta	agtaa					915

<210> 414

<211> 411

<212> DNA

<213> Plasmodium falciparum

<400> 414

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atacatactt	acatatatac	caatacatat	atattaatat	ttatatatag	gaaaaaaccc	180
aattattacgt	ctggacgtac	aaatcttttt	cggtgtcattg	atataactca	aaacgcttat	240
gagatattta	caacgaaatc	accaaataagg	tatgtcccggt	atgaaaagtgg	ccgatataaa	300
tgcaaaacat	atattttacat	ggaaggagaa	gaaacggacg	attacagtta	tgttctgact	360
tatcttcctc	tgatattact	tcttcatcag	aaagttagta	tgaagagata	g	411

<210> 415

<211> 390

<212> DNA

<213> Plasmodium falciparum

<400> 415

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gaggatattt	tgaacaaatt	gaatgaagaa	tggactatag	aacataatga	agatctgttg	120
gatataccat	catcaagtca	tgatgatatt	cttaaaaatta	aggatgaaac	atataatatac	180
attagtacaa	acaattttata	tagttatgaa	aataatgata	taacccca	ccaactcgga	240
ttgccaata	tcatacctag	tggtattatt	aagcaccaaa	ataatggact	gcgcacaaat	300
atatctatgg	atataccttt	tgatgaacaa	aataataatt	tggaaaacag	caatataaca	360
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<210> 416

<211> 993

<212> DNA

<213> Plasmodium falciparum

<400> 416

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aatcaaagga	actattacat	cacacgtaca	ccaaaagcaa	ccactaggac	attatgcgaa	120
tgtgaattat	atgcacctgc	cacctatgac	gacgatccac	aatgaaaga	agttatggat	180
aattttcaatc	gtcaaacaca	acagagattt	cacgagtacg	acgaaaggat	gaaaactaca	240
cgccaaaaat	gtaaagatca	attcgataaa	gaaatccaaa	aaattatatt	aaaagataaa	300
ttggaaaaag	aattaatgga	caaatttgcc	acattacaaa	ctgatataca	aatgatgct	360
attcccacat	gtatttgcca	aaaatcctta	gcagataaag	tggaaaaaac	atgcttgaga	420
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TEINS OF SAID CHROMOSOME USEFUL IN ANTI-MALARIAL VACCINES AND DIAGNOSTIC REAGENTS

(57) Abstract: Chromosome 2 of *Plasmodium falciparum* was sequenced and shown to contain 945,000 base pairs and encode 209 predicted genes. Compared to the *Saccharomyces cerevisiae* genome, chromosome 2 has a lower gene density, introns are more frequent, and proteins are markedly enriched in non-globular domains. A new family of surface proteins, rifins, was identified. Rifins are believed to play a role in antigenic variation. The genome sequence provides a foundation for development of methods to control malaria, a disease that kills millions of people annually.

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A. CLASSIFICATION OF SUBJECT MATTER

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US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 536/23.7; 435/252.3, 252.33, 320.1, 69.3, 69.1, 255.11, 240.1, 240.2, 325, 91.2; 424/185.1, 265.1, 268.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,733,772 A (WILLIAMSON et al) 31 March 1998, see entire document.	2-4 and 9
X	WO 94/17187 (THE UNITED STATES OF AMERICA, THE SECRETARY OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES) 04 August 1994, see entire document.	2-4 and 9
X	WILLIAMSON, K.C. et al. Cloning and expression of the gene for Plasmodium falciparum transmission-blocking target antigen, Pfs230. Molecular and Biochemical Parasitology. 1993, Vol. 58, pages 355-358, see entire document.	2-4 and 9



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

10 JULY 2000

Date of mailing of the international search report

15 AUG 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/26796

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
1-5, 7 and 9
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/26796

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (7):

C07H 21/04; C12N 1/21, 15/70, 1/16, 15/09, 15/30; C12P 21/06, 19/34; A61K 39/00, 39/015

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

536/23.7; 435/252.3, 252.33, 320.1, 69.3, 69.1, 255.11, 240.1, 240.2, 325, 91.2; 424/185.1, 265.1, 268.1

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

Sequence search performed by A Geneseq, Swissprot, Issued patents AA, SPTREMBL and PIR.
STN, MEDLINE, CAPLUS, WEST
search terms: Hoffman, Carucci, Plasmodium falciparum, chromosomes#

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

The inventions listed as Groups I-XIII do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Group I, claim(s) 1, 5, 7 and 9, drawn to a nucleotides encoding the proteins of chromosome 2 of Plasmodium falciparum, and a vaccine comprising nucleotide sequence

Group II, claim(s) 2-4, drawn to proteins encoded by chromosome and rifins.

Group III, claim(s) 6, 8, 10, drawn to a vaccine comprising secreted or membrane proteins of Falciparum .

Group IV, claim(s) 11, 13 and 15, drawn to a method of detecting infection with Plasmodium falciparum by PCR or hybridization comprising nucleotide sequences.

Group V, 12, 14 and 16, drawn to a method of detecting infection with Plasmodium falciparum by ELISA comprising polyclonal or monoclonal antisera.

Group VI, claim(s) 17 , drawn to a polyclonal antisera.

Group VII, claim(s) 18 , drawn to a Monoclonal antibodies.

Group VIII, claim(s) 19, drawn to the use of proteins or fragments of proteins encoded by chromosome 2 of Plasmodium for the identification drugs to treat or prevent Plasmodium falciparum infection.

Group IX, claim(s) 20, drawn to a method of use of rifins for the identification drugs to treat or prevent Plasmodium falciparum infection.

Group X, claim(s) 21 , drawn to a method of use of secreted or membrane proteins for the identification drugs to treat or prevent Plasmodium falciparum infection.

Group XI, claim(s) 22 , drawn to a method of use proteins or fragments of proteins encoded by chromosome 2 of Plasmodium for the identification or diagnosis of drug resistance in Plasmodium falciparum

Group XII, claim(s) 23 , drawn to a method of use of rifins or fragments of Plasmodium for the identification or diagnosis of drug resistance in Plasmodium falciparum

Group XIII, claim(s) 24 , drawn to a method of use of secreted or membrane proteins or fragments of Plasmodium for the identification or diagnosis of drug resistance in Plasmodium falciparum

The inventions listed as Groups I-XIII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Group I is directed to a nucleotide and vaccine(method of use) which is the first product and first method of using the product. The special technical feature is the nucleotide encoding the proteins of chromosome 2. Groups II, III, VI, VII are drawn to structurally different products, which do not require each other for their practice and do not share the same or a corresponding technical feature. The Groups IV, V, VIII-XIII inventions are drawn to methods having different goals, method steps and starting materials, which do not require each other for their practice and do not share the same or a corresponding technical

INTERNATIONAL SEARCH REPORT

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feature. Note that PCT Rule 13 does not provide for multiple products or methods within a single application. Since the special technical feature of the Group I invention is not present in the Groups II-XIII claims, and the special technical features of the Group II-XIII inventions are not present in the Group I claims, unity of invention is lacking.

ELECTION OF SPECIES:

EACH group of invention (groups 1-13) has several patentably distinct and different inventions (Multiple SEQ.ID.NOS). If applicant elects group 1 then he is required to elect any one of the SEQ.ID.NOS listed in the application (should be identified with SEQ.ID.NO). In each group each SEQ.ID.NO is considered as a separate invention. For example if group 1 or 2 has 20 SEQ.ID.NOS then each group has 20 inventions and total inventions in the application are $13 \times 20 = 260$ inventions.

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